

ἌΤΛΑΣ ΟΥΡΑΝΙΟΣ, 756 1-23
The COELESTIAL ATLAS;

OR, A NEW

E P H E M E R I S 172468

For the YEAR of our LORD 1787. 8

Being the Third after

BISSEXTILE, or LEAP-YEAR

Wherein are contained

The Heliocentrick and Geocentrick Places of the Planets,
the ECLIPSES of the Luminaries, and other remarkable PHENOMENA that will happen this Year.

Carefully computed

From the genuine TABLES of Dr. EDMUND HALLEY,
those of Professor MAYER, and other the latest and most correct
ASTRONOMICAL TABLES.

A L S O

A Compleat ALMANACK, containing the FEASTS and FASTS
of the Church of ENGLAND; the Times of the LUNATIONS;
the Rising and Setting of the Sun, Moon, and Planets, &c.

Adapted to the

Meridian and Latitude of the ancient and honourable
CITY of LONDON.

To which are added,

Several useful TABLES: As, a TABLE of the Sun's
semi-diurnal Arcs, by which the Times of the Sun's Rising and
Setting may be known by Inspection, on every Day of the Year, and
in any Part of GREAT-BRITAIN or IRELAND; a TABLE,
and a very correct one of the Eclipses of the first Satelles;
a TABLE of the Sun's Right-Ascension; a TABLE of
the most remarkable fixed Stars, corrected from FLAMSTEED'S
Catalogue; and, lastly, a correct TABLE of Latitudes and Longi-
tudes of the most remarkable Places in the World.

By ROBERT WHITE,
Teacher of the Mathematicks.

Ἄτλας τῶν ἀστρονομικῶν φαινομένων.

The THIRTY-EIGHTH IMPRESSION.

L O N D O N :

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by ROBERT HORSFIELD, at their Hall, in Ludgate-street.

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Ephemerides. h.

Chronological Notes for the Year 1787.

Golden Number	-	-	2	Septuagesima Sunday	Feb. 4
Cycle of the Sun	-	-	4	Shrove Sunday	- - - 18
The Epact	-	-	11	Easter Day	- - Apr. 8
Dominical Letter	-	-	G	Whit-Sunday	- - May 27
Number of Direction	-	-	18	Trinity Sunday	- June 3
Roman Indiction	-	-	5	Advent Sunday	- Dec. 2

Astronomical CHARACTERS explained.

♈ Aries	♋ Cancer	♎ Libra	♏ Capricorn
♉ Taurus	♌ Leo	♍ Scorpio	♐ Aquarius
♊ Gemini	♍ Virgo	♎ Sagittary	♑ Pisces
♄ Saturn	☉ Sol (the Sun)	☾ Luna (the Moon)	☉ Tellus,
♃ Jupiter	♀ Venus	♊ Moon's N. Node	Terra (or
♂ Mars	☿ Mercury	♋ her S. Node	the Earth)
♌ Conjunction when Planets are in the same Sign, Deg. Min. &c.			
* Sextile when 2 Signs dist.		Δ Trine when 4 Signs dist.	
□ Quartile when 3 Signs dist.		♌ Opposition when 6 Signs dist	

Of the Four Quarters of the YEAR 1786.

	d	h	m
THE Spring Quarter begins March	20	4	14 aftern.
The Summer Quarter begins June	21	2	6 aftern.
The Autumnal Quarter begins September	23	3	47 morn.
The Winter Quarter begins December	21	8	22 aftern.

THE beautiful Planet VENUS will be a Morning Star 'till October the 18th; and after that Time she will be an Evening Star to the Year's End.

JUPITER will be an Evening Star 'till the 24th Day of May, at which Time he becomes a Morning Star, and so continues 'till Dec. 13. h, and after that an Evening Star to the Year's End.

The NAMES of the Learned JUDGES of the LAW.

I. The Right Hon. Lord Thurlow, Lord High Chancellor.

Right Honourable Sir Lloyd Kenyon, Bart. Master of the Rolls.

II. In the } R. H. Wm. Earl Mansfield, L. C. J. Edward Willes, Esq;
K. Bench. } Sir W. H. Ashurst, Knt. Francis Buller, Esq;

III. In the } R. H. Alex. Lord Loughborough, L. C. J. Sir Henry Gould, Knt.
C. Pleas. } John Wilson, Esq; John Heath, Esq;

IV. In the } Sir John Skynner, Knt. L. C. B. Sir James Eyre, Knt.
Exchequer } Sir Beaumont Hotham, Knt. Sir Richard Perryn, Knt.

Pepper Arden, Esq; Attor. General; Alex. McDonald, Esq; Solic. General.

A TABLE of TERMS and their RETURNS.

Hilary Term begins Jan. 23, ends Feb. 12.

Returns or Effoign-days.

		Exc.	Ret.	Ap.	W. D.
In eight Days of St. Hilary,	Jan. 20	21	22	23	Tuesday
From the Day of St. Hilary in 15 Days,	27	28	29	30	Tuesday
On the Morrow of the Purification,	Feb. 3	4	5	6	Tuesday
In eight Days of the Purification,	9	10	11	12	Monday

Easter Term begins April 25, ends May 21.

From the Day of Easter in 15 Days,	April 23	23	24	25	Wedn.
From the Day of Easter in 3 Weeks,	30	30	31	2	Wedn.
From the Day of Easter in 1 Month,	May 7	7	8	9	Wedn.
From the Day of Easter in 5 Weeks,	14	14	15	16	Wedn.
On the Morrow of the Ascension,	18	19	20	21	Monday

Trinity Term begins June 8, ends June 27.

On the Morrow of the Holy Trinity,	June 4	5	6	8	Friday.
In 8 Days of the Holy Trinity,	11	12	13	14	Thurs.
In 15 Days of the Holy Trinity,	18	19	20	21	Thurs.
In 3 Weeks of the Holy Trinity,	25	25	26	27	Wedn.

Michaelmas Term begins Nov. 6, ends Nov. 28.

On the Morrow of All Souls,	Nov. 3	4	5	6	Tuesday
On the Morrow of St. Martin,	12	13	14	15	Thurs.
In 8 Days of St. Martin,	19	19	20	21	Wedn.
In 15 Days of St. Martin,	26	26	27	28	Wedn.

N. B. No Sittings in Westminster-Hall on Ascension-day, Midsummer-day, and the 2d of February.

The Exchequer opens eight Days before any Term begins, except Trinity, before which it opens but four Days.

Note, That the first and last Days of every Term, are the Days of Appearance.

BIRTH-DAYS of the ROYAL FAMILY.

KING GEORGE III. June 4, 1738	Prince Adolph. Fred. Feb. 24, 1774
Prince of Wales, Aug. 12, 1762	Princess Mary, April 25, - 1776
Prince Frederick, Aug. 16, 1763	Princess Sophia, Nov. 3, - 1777
Prince Wm. Henry, Aug. 21, 1765	Princess Amelia, Aug. 7, - 1783
Prs. Cha. Aug. Mat. Sept. 29, 1766	Queen Charlotte, May 19, 1744
Prince Edward, Nov. 2, - 1767	Prs. Amelia, June 10, - 1711
Prs. Augusta Sophia, Nov. 8, 1768	Prs. Augusta of Brun. Aug. 11, 1737
Prs. Elizabeth, May 22, - 1770	Duke of Gloucester, Nov. 25, 1743
Prince Ernest Augustus, June 5, 1771	Duke of Cumberland, Nov. 7, 1745
Prince Aug. Fred. Jan. 27, 1773	

SOVEREIGNS OF EUROPE, their Accession, &c.

Kingdoms, &c.	To whom subject.	When born.	Began to reign.
England, &c.	George III.	June 4, 1738	Oct. 25, 1760
France	Lewis XVI.	Aug. 23, 1754	May 10, 1774
Russia	Catharine II.	May 2, 1729	July 9, 1762
Spain	Charles III.	Jan. 20, 1716	Aug. 10, 1759
Portugal	Mary	Dec. 7, 1734	Feb. 24, 1777
Prussia	Frederic IV.	Sept. 25, 1744	Aug. 17, 1786
Denmark & Norway	Christian VII.	Jan. 29, 1749	Jan. 14, 1766
Sweden	Gustavus III.	Jan. 24, 1746	Feb. 13, 1771
Germany	Joseph	Mar. 13, 1741	Aug. 18, 1765
Poland	Stanislaus III.	Jan. 17, 1732	Nov. 25, 1764
Holland	William V.	March 8, 1748	Oct. 11, 1751
Papedom	Pius VI.	Dec. 27, 1717	Feb. 18, 1775
Sardinia	Victor	June 26, 1726	Mar. 20, 1773
Ottoman Empire	Achmet IV.	Nov. 5, 1719	Jan. 21, 1774

The FULL WEIGHT of the Coins, with the LEAST WEIGHT allowed to pass of the Gold Coin.

GOLD.		SILVER.	
Wt. allowed.	Full Wt.		Full Wt.
dwt. gr.	dwt. gr.		dwt. gr.
Guinea, - - 5 8	5 9 $\frac{3}{4}$	A Crown, - - -	19 8 $\frac{1}{4}$
Half Guinea, - 2 16	2 16 $\frac{1}{4}$	Half Crown, - - -	9 16 $\frac{3}{4}$
Quarter Guinea, 1 8	1 8 $\frac{1}{4}$	Shilling, - - -	3 20 $\frac{1}{4}$
		Six Pence, - - -	1 22 $\frac{1}{4}$

According to the above proportions it appears, that the value of a *lb.* of silver is 62s. or 31. 2s. and of a *lb.* of gold is 44 $\frac{1}{2}$ guineas, or 461. 14s. 6d. Also that the *oz.* of silver is 5s. 2d. and the *oz.* of gold 31. 17s. 10 $\frac{1}{2}$ d. So that the value of the standard gold is 15 times that of the silver, and 1-14th more.

A TABLE of the KINGS and QUEENS of ENGLAND
since the CONQUEST.

Kings and Queens	Born A.D.	Began their Reign	Reigned Y. M. D.	Rem. Deaths and Dethroned	Where buried
Will. Conq.	1027	1066 Oct. 14	20 10 26 60	Burft by Leap.	Caen, Norm
Will. Rufus	1057	1087 Sept. 9	12 10 24 43	Slain acciden- tally.	Wincheſter
Henry I.	1068	1100 Aug. 2	35 3 29 77		Reading
Stephen	1105	1135 Dec. 1	18 10 24 49		Feverſham
Henry II.	1133	1154 Oct. 25	34 8 11 55		Fonteveraud
Richard I.	1156	1189 July 6	9 9 0 43	Slain with an Arrow.	Fonteveraud
John	1165	1199 April 6	17 6 13 50		Worceſter
Henry III.	1207	1216 Oct. 19	56 0 28 65		Westminſter
Edward I.	1230	1272 Nov. 16	34 7 21 67		Westminſter
Edward II.	1284	1307 July 7	19 6 18 43		Glouceſter
Edward III.	1312	1327 Jan. 25	50 4 27 65		Westminſter
Richard II.	1366	1377 June 21	22 3 8 33	Dep. & murd.	Westminſter
Henry IV.	1367	1399 Sept. 29	13 5 20 46		Canterbury
Henry V.	1389	1413 Mar. 20	9 5 11 33		Westminſter
Henry VI.	1421	1422 Aug. 31	38 6 4 49	Dep. & murd.	Windſor
Edward IV.	1442	1461 Mar. 4	22 1 5 41		Windſor
Edward V.	1471	1483 April 9	0 2 15 12	Murder'd.	Not known
Richard III.	1443	1483 June 22	2 2 0 42	Slain in Battle.	Leiceſter
Henry VII.	1456	1485 Aug. 22	23 8 0 52		Westminſter
Henry VIII.	1492	1509 April 22	37 9 6 55		Windſor
Edward VI.	1537	1547 Jan. 28	6 5 8 15		Westminſter
Mary I.	1516	1553 July 6	5 4 11 42	Died of Grief.	Westminſter
Elizabeth	1533	1558 Nov. 17	44 4 7 69		Westminſter
James I.	1566	1603 Mar. 24	22 0 3 58		Westminſter
Charles I.	1600	1625 Mar. 27	23 10 3 48	Beheaded.	Windſor
Charles II.	1630	1649 Jan. 30	36 0 7 54		Westminſter
James II.	1633	1685 Feb. 6	4 0 7 67	Abdicated.	St. Germain
Mary II.	1662	1689 Feb. 13	5 10 15 32		Westminſter
William III.	1650	1689 Feb. 13	13 0 23 52		Westminſter
Anne	1665	1702 Mar. 8	12 4 24 49		Westminſter
George I.	1660	1714 Aug. 1	12 10 10 67		Hanover
George II.	1683	1727 June 11	33 4 14 77		Westminſter
George III.	1738	1760 Oct. 25	Crowned Sept. 22, 1761.		

Above you view the Riſe and Fall of Kings,
Whoſe Fate ſometimes a uſeful Leſſon brings.
Well if all Men could profit from the paſt!
Each know his Duty, each excel the laſt,
And juſtly execute his ſtated Taſk.

A TABLE of the most Reverend, Right Reverend, and Reverend, the ARCHBISHOPS, BISHOPS and DEANS, exercising Ecclesiastical Jurisdiction, 1787.

BISHOPS.	Sees.	Date.	Succeeded.	DEANS.
Dr. John Moore	{ Bangor	1775	Ewer deceased	
Arch-Bishop	{ Canterb. A. B.	1783	Cornwallis dec.	Dr. Horne
Dr. Will. Markham	{ Cbeffer	1771	Keene transl.	
Arch-Bishop	{ York A. B.	1777	Drummond de.	Dr. J. Fountayne
	{ St. David's	1766	Squire decaf.	
Dr. Robert Lowth	{ Oxford	1766	Hume transl.	
	{ London	1777	Terrick dec.	Bishop Thurlow
	{ Bangor	1756	Pearce transl.	
Dr. John Egerton	{ Litch & Cov.	1768	Cornwallis tr.	
	{ Durham	1771	Trevor decaf.	Hon. W. Digby
	{ Litch & Cov.	1771	Egerton transl.	
Hon. Dr. B. North	{ Worcester	1774	Johnson decaf.	
	{ Winchester	1781	Thomas decaf.	Dr. Ogle
Lord J. Beauclerk	{ Hereford	1746	Egerton decaf.	Dr. Wetherell
Sir W. Ashburnham	{ Chichester	1754	Mawson transl.	Dr. Harward
Dr. Charles Mofs	{ St. David's	1766	L with transl.	
	{ Bath & Wells	1774	Willes deceased	Ld. Fr. Seymour
Dr. J. Shipley	{ Landaff	1769	Ewer transl.	
	{ St. Asaph	1769	Newcome dec.	Mr. W. D. Shipley
Dr. Edmund Law	{ Carlisle	1769	Lyttelton dec.	Dr. Ekins
	{ Landaff	1769	Shipley transl.	
Dr. S. Barrington	{ Salisbury	1782	Hume dec.	Dr. Noel
Dr. John Hinchliffe	{ Peterborough	1769	Lamb dec.	Dr. Ch. Tarrant
	{ St. David's	1774	Mofs transl.	
H. Dr. James Yorke	{ Gloucester	1779	Warburton dec.	
	{ Ely	1781	Keene deceased	Dr. Cooke
Dr. John Thomas	{ Rochester	1774	Pearce dec.	Dr. Dampier
	{ Litch. & Cov.	1775	B. North tr.	
Dr. Richard Hurd	{ Worcester	1781	B. North tr.	Dr. St. John
Dr. Beilby Porteus	{ Chester	1776	Markham tran.	Dr. Will. Smith
Dr. John Butler	{ Oxford	1777	Lowth transl.	Dr. Jackson
Dr. John Rofs	{ Exeter	1778	Keppel dec.	Dr. Buller
Dr. Tho. Thurlow	{ Lincoln	1779	Green dec.	Dr. Kaye
	{ St. David's	1779	Yorke transl.	
Dr. John Warren	{ Bangor	1783	Moore transl.	Dr. Tho. Lloyd
Dr. J. Cornwallis	{ Litch. & Cov.	1781	Hurd transl.	Dr. Proby
Dr. Samuel Hall fax	{ Gloucester	1781	Yorke transl.	Dr. Josiah Tucker
	{ Bristol	1782	Newton dec.	
Dr. Lewis Bagot	{ Norwich	1783	Yonge dec.	Dr. P. Lloyd
Dr. Richard Watson	{ Landaff	1782	Barrington tr.	Dr. Adams, A. D.
Dr. Edward Smalwell	{ St. David's	1783	Warren transl.	Mr. Wollaston, P.
Dr. Christ. Wilson	{ Bristol	1783	Bagot transl.	Dr. Hallam
	{ Westminster	1768		Bishop Thomas
Mr. Claud-Crigan	{ Sodor & Man	1784	Mason dec.	
	{ Windsor	1778	Hon. &	Rev. Dr. Harley

A General INTEREST TABLE,

by which the Interest of any Sum, at any Rate, and for any Time, may be readily found.

Days	3 per Cent.				3½ per Cent.				4 per Cent.				4½ per Cent.				5 per Cent.			
	l.	s.	d.	q.	l.	s.	d.	q.	l.	s.	d.	q.	l.	s.	d.	q.	l.	s.	d.	q.
1			1	3			2	1			2	2			3	0			3	0
2			3	3			4	2			5	1			6	0			6	2
3			5	3			6	3			7	3			8	3			9	3
4			7	3			9	0			10	2			11	3			1	0
5			9	3			11	2			1	1			1	2			1	4
6			11	3			1	3			1	3			1	5			1	7
7		1	1	3			1	4			1	6			1	8			1	11
8		1	3	3			1	6			1	9			1	11			2	1
9		1	5	3			1	8			1	11			2	2			2	5
10		1	7	2			1	11			2	2			2	5			2	8
20		2	3	1			3	10			4	4			4	11			5	5
30		4	11	0			5	9			6	6			7	4			8	2
40		6	6	3			7	8			8	9			9	10			10	11
50		8	2	2			9	7			10	11			12	3			13	8
60		9	10	1			11	6			13	1			14	9			16	5
70		11	6	0			13	5			15	4			17	3			19	2
80		13	1	3			15	4			17	6			19	8			1	11
90		14	9	2			17	3			19	8			2	2			4	7
100		16	5	1			19	2			1	11			4	8			7	4
200	1	12	10	2	1		18	4	1	2	3	10	0	2	9	3	3	2	14	9
300	2	9	3	3	2		17	6	1	3	5	9	0	3	13	11	14	2	2	1

N. B. This Table contains the interest of 100l. for all the several days in the 1st column, and at the several rates of 3, 3½, 4, 4½, and 5 per cent. in the other 5 columns.

To find the interest of 100l. for any other time, as 1 year and 278 days, at 4½ per cent. Take the sums for the several days here annexed.

The interest for 1 year	4	10	0	0
Against 200 days is	-	2	9	3
70 days	-	0	17	3
8 days	-	0	1	11
Interest required	-	7	18	6

For any other Sum than 100l. First find for 100l. as above, and take it so many times or parts as the sum is of 100l. Thus, to find for 355l. at 4½, for 1 year and 278 days,

First, 3 times the above sum, (for 300l.) is	-	23	15	8
½ (for 50l.) is	-	3	19	3
⅓ of this (for 5l.) is	-	0	7	11
So for 355 it is	-	28	2	10

When the interest is required for any other rate than those in the table, it may easily be made out from them. So ½ of 5 is 2½, ⅓ of 4 is 2, ⅓ of 3 is 1, ⅓ of 3 is 1, 1-6th of 3 is ½, and 1-12th of 3 is ¼. And so, by parts, or by adding or subtracting, any rate may be made out.

The LUNATIONS.

Full Moon the 3^d day, at 47 minutes past 11 at night,
 Last quarter the 11th day, at 52 minutes past 6 morning,
 New Moon the 16th day, at 47 minutes past 10 morning,
 First quarter the 26th day, at 12 minutes past 5 afternoon.

M D	Sunday & other remark. days	☉ rises	☉ sets	☉'s declin.	☾'s declin.	☾ rise & sets	☾ south	Clock bef. ☉	
1	Circumcision	8 5	3 55	23 8 0	14 n 39	1 m 26	9 a 54	4 8	
2		8 4	3 56	22 55	25 15	6 35	10 58	4 36	
3		8 3	3 57	22 49	24 3	☾ rise	morn	5 4	
4		8 3	3 57	22 43	21 12	4 a 52	0 c	5 31	
5	Old Christ. Day	8 2	3 58	22 36	17 4	6 16	0 59	5 58	
6	Epiph. Twelfth Day	8 0	3 59	22 29	12 6	7 37	1 53	6 24	
7	S. alt. Epiph.	8 0	4 0	22 21	6 40	8 55	2 42	6 50	
8	Lucian. Plow Mond.	7 58	4 1	22 13	1 7	10 10	3 28	7 16	
9		7 57	4 2	22 5	4 s 18	11 21	4 12	7 41	
10		7 57	4 3	21 56	9 25	morn.	4 54	8 5	
11		7 56	4 4	21 47	14 3	0 30	5 36	8 29	
12	Old N. Yr's Day	7 55	4 5	21 37	18 4	1 42	6 20	8 52	
13	Hilary. Cam. T. beg.	7 54	4 6	21 27	21 20	2 50	7 5	9 15	
14	S. alt. Epiph.	7 53	4 7	21 16	23 41	3 57	7 52	9 37	
15	Oxf. Term beg.	7 52	4 8	21 5	25 1	4 59	8 41	9 58	
16		7 51	4 9	20 54	25 12	5 53	9 31	10 18	
17	O. Twelfth Day	7 49	4 11	20 42	24 12	6 39	10 22	10 38	
18	Q. birth day k.	Prisca	4 12	20 30	22 2	7 12	11 12	10 58	
19		7 47	4 13	20 17	18 46	☾ sets	0 a 1	11 16	
20	Fabian	7 45	4 15	20 4	14 35	5 a 46	0 49	11 34	
21	S. alt. Epiph.	Agnes	4 16	19 51	9 41	7 1	1 35	11 51	
22	Vincent	7 42	4 18	19 37	4 16	8 19	2 21	12 7	
23	Hil. Term beg.	7 41	4 19	19 23	1 n 26	9 36	3 7	12 23	
24		7 40	4 20	19 9	7 8	10 54	3 54	12 37	
25	St. Paul	7 38	4 22	18 54	12 34	morn.	4 43	12 51	
26		7 37	4 23	18 39	17 26	0 15	5 36	13 4	
27	Ang. F. bo.	7 35	4 25	18 24	21 22	1 37	6 32	13 16	
28	S. alt. Epiph.	7 33	4 27	18 8	24 4	2 59	7 31	13 27	
29		7 32	4 28	17 52	25 13	4 12	8 32	13 38	
30	St. Cha. J. mar.	7 30	4 30	17 36	24 41	5 13	9 35	13 47	
31		7 28	4 32	17 19	22 31	6 3	10 35	13 56	
Days	Day increas.	Length of Day.	Helioc. long. ♀	Helioc. long. ♂	Helioc. long. ♀	Helioc. long. ♂	Helioc. long. ♀	Helioc. long. ♂	h sets.
1	0 7	7 51	18 24	21 8 9	14 32	11 36	9 12	22 17	6 a 55
7	0 17	8 1	18 35	21 41	17 52	17 13	18 55	20 12	6 33
13	0 29	8 13	18 46	22 13	21 14	23 20	28 40	13 13	6 11
19	0 43	8 27	18 58	22 45	24 38	29 27	8 25	3 m 2	5 49
25	1 1	8 45	19 9	23 18	28 4	5 33	18 11	20 49	5 28

1787.

January.

9

Days	Day lig. begins	Day lig. ends	Durat. twilig.	Pl D's node	h's latitude	u's latitude	δ's latitude	♀'s latitude	♂'s latitude
1	5 59	6 1	2 10	14 39	1 2	1 6	0 31	3 n 47	3 n 8
7	5 56	6 4	2 9	14 19	1 2	1 4	0 34	5 7	2 29
13	5 52	6 8	2 7	14 c	1 2	1 3	0 38	6 4	1 34
19	5 46	6 14	2 5	13 41	1 3	1 1	0 41	6 34	0 37
25	5 39	6 21	2 3	13 22	1 3	0 5	0 45	6 40	0 s 14

Days	☉'s longitude	D's long.	D's latitude	h's long.	u's long.	δ's long.	♀'s long.	♂'s long.
1	11 6 32	6 11 43	3 n 14	15 12	11 8 22	25 5	16 18	23 54
2	12 7 42	21 36	2 3	15 18	11 21	25 50	15 39	23 44
3	13 8 51	6 25	0 44	15 25	11 D 21	26 34	15 1	23 D 41
4	14 10 0	21 5	0 s 37	15 31	11 21	27 19	14 24	23 44
5	15 11 9	5 28	1 55	15 38	11 21	28 4	14 48	24 0
6	16 12 18	19 28	3 3	15 44	11 21	28 48	13 13	24 21
G	17 13 26	3 4	3 59	15 51	11 21	29 33	12 38	24 48
8	18 14 35	16 15	4 40	15 57	11 22	0 18	12 4	25 20
9	19 15 43	29 3	5 6	16 4	11 22	1 3	11 31	25 59
10	20 16 52	11 30	5 17	16 10	11 23	1 48	10 59	26 46

11	21 18 0	23 40	5 13	16 17	11 24	2 33	10 27	27 36
12	22 19 9	5 39	4 56	16 24	11 25	3 18	9 56	28 29
13	23 20 17	17 31	4 26	16 31	11 27	4 3	9 25	29 26
G	24 21 24	29 20	3 45	16 38	11 29	4 48	9 1	0 25
15	25 22 32	11 12	2 54	16 45	11 31	5 33	8 39	1 28
16	26 23 39	23 9	1 55	16 52	11 33	6 18	8 18	2 34
17	27 24 46	5 15	0 51	16 59	11 36	7 3	7 58	3 42
18	28 25 52	17 32	0 n 17	17 6	11 38	7 48	7 39	4 52
19	29 26 57	0 2	1 25	17 13	11 41	8 34	7 21	6 4
20	0 28 1	12 46	2 31	17 20	11 44	9 19	7 6	7 18

G	1 29 5	25 44	3 29	17 27	11 47	10 5	6 55	8 33
22	2 30 8	8 55	4 17	17 34	11 51	10 50	6 48	9 50
23	3 31 10	22 20	4 53	17 41	11 54	11 35	6 44	11 8
24	4 32 11	5 56	5 12	17 48	11 57	12 21	6 43	12 27
25	5 33 10	19 45	5 14	17 55	12 1	13 6	6 D 43	13 48

26	6 34 7	3 8 44	4 57	18 2	12 5	13 51	6 44	15 10
G	7 35 3	17 52	4 23	18 9	12 10	14 37	6 48	16 33
27	8 35 58	2 11 7	3 32	18 16	12 14	15 22	6 54	17 57
29	9 36 52	16 28	2 2	18 23	12 19	16 7	7 3	19 22
30	10 37 44	0 51	1 13	18 30	12 24	16 53	7 15	20 48
31	11 38 35	15 12	0 s 5	18 37	12 29	17 38	7 30	22 15

Days	☉ sets	☉ rises	♀ rises	♂ rises	h's declin.	u's declin.	δ's declin.	♀'s declin.	♂'s declin.
1	3 m 9	7 m 1	8 m 6	6 m 28	17 s 17	14 n 13	23 s 53	18 s 42	20 s 11
7	2 45	6 55	7 11	6 12	17 6	14 14	24 2	17 46	20 53
13	2 20	6 48	6 27	6 14	16 54	14 18	24 2	17 51	21 54
19	1 56	6 42	5 50	6 22	16 41	14 23	23 53	16 42	22 42
25	1 31	6 35	5 24	6 32	16 25	14 31	23 34	16 38	22 59

10 February hath XXVIII Days. White.

The LUNATIONS.

Full Moon the 2d day, at 15 minutes past noon,
 Last quarter the 10th day, at 48 minutes past 3 morning,
 New Moon the 18th day, at 17 minutes past 2 morning,
 First quarter the 24th day, at 49 minutes past mid night.

M	Sundays & other	☉	☉	☉'s	☾'s	☾rises	☾	Clock
D	remark. days	rises	sets	declin.	declin.	& sets	south	bef. ☉
1		7 27	4 33	17 s 2	18 n 6	6 m 39	11 a 30	14
2	Purif. Cand. day	7 25	4 35	16 44	14 19	☾rises	morn	14
3	Blase	7 23	4 37	16 27	9 3	6 a 19	0 21	14
G	Septuagesima S.	7 22	4 38	16 9	3 23	7 38	1 10	14
5	Agatha	7 20	4 40	15 51	2 s 7	8 53	1 6	14
6		7 18	4 42	15 32	7 28	10 5	2 40	14
7		7 16	4 44	15 14	12 22	11 18	3 24	14
8		7 14	4 46	14 55	16 40	morn	4 7	14
9		7 13	4 47	14 36	20 14	0 27	4 52	14
10		7 11	4 49	14 16	22 55	1 35	5 39	14
G	Sexagesima S.	7 9	4 51	13 56	24 36	2 41	6 28	14
12	Hil. Term ends	7 7	4 53	13 36	25 11	3 39	7 18	14
13		7 5	4 55	13 16	24 36	4 28	8 9	14
14	Valentine	7 3	4 57	12 56	22 50	5 9	9 0	14
15		7 1	4 59	12 35	19 58	5 39	9 49	14
16		7 0	5 0	12 16	16 4	6 3	10 38	14
17		6 58	5 2	11 54	11 21	6 23	11 26	14
G	Quinqu. or Shrove Sun.	5 4	11 33	6 0	☾sets	0 a 14	14	14
19		6 54	5 6	11 11	0 16	7 a 17	1 1	14
20	Shrove Tuesday	6 52	5 8	10 50	5 n 14	8 39	1 49	14
21	Ash Wednesday	6 50	5 10	10 28	11 11	10 1	2 39	13
22		6 48	5 12	10 6	16 15	11 24	3 31	13
23		6 46	5 14	9 44	20 26	morn	4 27	13
24	St. Matthias. Pr. Adol. Fre. born	6 42	5 18	9 22	23 24	0 47	5 26	13
G	1 Sun. in Lent	6 42	5 18	9 0	24 55	2 4	6 26	13
26		6 40	5 20	8 37	24 50	3 8	7 26	13
27		6 38	5 22	8 15	23 11	3 59	8 25	13
28	Ember Week	6 36	5 24	7 52	20 7	4 37	9 21	12
Day	Day increas.	Length of day	Helioc. long. ♀	Helioc. long. ♂	Helioc. long. ♂	Helioc. long. ♀	Helioc. long. ♂	h fets
1	1 23	9 7	19 22	23 55	2 7	12 39	29 34	10 18
7	1 45	9 29	19 33	24 2	5 37	18 44	9 19	26 52
13	2 7	9 51	19 44	24 59	9 9	24 48	19 4	14 1
19	2 29	10 13	19 56	25 31	12 44	0 51	28 47	2 39
25	3 52	10 36	20 7	26 4	16 19	6 53	8 30	23 43

1787.

February.

II

Clock
bef. ☉
 h
fets
rises
6 m
6 3

Day	Day lig. begins	Day lig. ends	Durat. twilig.	Pl. D's node	h's latitude	u's latitude	♂'s latitude	♀'s latitude	♂'s latitude
1	5 31	6 30	2 0	13 1/2 0	1 s 3	0 s 57	0 s 50	6 n 24	1 s 4
7	5 22	6 39	1 59	12 41	1 4	0 56	0 53	5 59	1 37
13	5 12	6 48	1 57	12 22	1 4	0 54	0 55	5 26	1 58
19	5 0	7 0	1 57	12 3	1 4	0 52	0 58	4 50	2 7
25	4 50	7 10	1 56	11 44	1 5	0 51	1 1	4 11	2 0
Day	☉'s longitude	☽'s long.	☽'s latitude	h's long.	u's long.	♂'s long.	♀'s long.	♂'s long.	
1	12 39 24	29 28 28	1 s 23	18 45	12 8 34	18 24	7 48	23 42	
2	13 40 12	13 32	2 34	18 52	12 39	19 9	8 8	25 10	
3	14 40 59	27 22	3 34	19 0	12 45	19 55	8 29	26 40	
4	15 41 45	10 52	4 22	19 7	12 51	20 41	8 51	28 11	
5	16 42 29	24 2	4 5	19 15	12 57	21 27	9 14	29 43	
6	17 43 12	6 52	5 10	19 22	13 3	22 13	9 38	1 15	
7	18 43 54	19 22	5 10	19 29	13 9	22 59	10 2	2 48	
8	19 44 36	11 35	4 57	19 36	13 15	23 45	10 32	4 21	
9	20 45 16	13 36	4 31	19 43	13 22	24 31	11 3	5 55	
10	21 45 55	25 28	3 33	19 51	13 29	25 17	11 35	7 30	
11	22 46 33	7 17	3 6	19 58	13 36	26 3	12 8	9 6	
12	23 47 10	19 9	2 10	20 5	13 43	26 49	12 42	10 43	
13	24 47 45	1 8	1 8	20 12	13 50	27 35	13 17	12 21	
14	25 48 19	13 19	0 3	20 19	13 57	28 21	13 54	14 0	
15	26 48 52	25 44	1 n 5	20 26	14 5	29 7	14 32	15 40	
16	27 49 24	8 28	2 10	20 34	14 12	29 53	15 12	17 20	
17	28 49 54	21 31	3 10	20 41	14 20	0 39	15 53	19 2	
18	29 50 22	4 53	4 1	20 48	14 28	1 25	16 35	20 44	
19	30 50 48	18 31	4 39	20 55	14 36	2 12	17 18	22 27	
20	1 51 13	2 23	5 2	21 2	14 44	2 58	18 2	24 11	
21	2 51 36	16 25	5 7	21 9	14 53	3 44	18 47	25 57	
22	3 51 57	0 32	4 53	21 17	15 1	4 30	19 33	27 43	
23	4 52 16	14 42	4 22	21 24	15 10	5 16	20 20	29 30	
24	5 52 32	28 52	3 34	21 31	15 19	6 2	21 8	1 19	
25	6 52 47	12 59	2 34	21 38	15 28	6 49	21 56	3 8	
26	7 52 59	27 3	1 24	21 45	15 37	7 35	22 45	4 58	
27	8 53 9	11 3	0 10	21 52	15 46	8 21	23 35	6 49	
28	9 53 17	24 57	1 s 4	21 59	15 55	9 7	24 26	8 41	
Day	u's fets	♂'s rises	♀'s rises	♂'s rises	h's declin.	u's declin.	♂'s declin.	♀'s declin.	♂'s declin.
1	1 m 5	6 m 26	4 m 57	6 m 45	16 s 13	14 n 43	23 s 1	16 s 50	22 s 26
7	0 45	6 17	4 44	6 52	16 0	14 55	22 22	17 7	21 8
13	0 25	6 7	4 37	6 5	15 47	15 9	21 34	17 23	19 0
19	0 5	5 57	4 31	6 54	15 33	15 24	20 38	17 33	16 2
25	11 a 45	5 47	4 28	6 52	15 20	15 41	19 35	17 33	12 14

The LUNATIONS.

Full Moon the 4th day, at 51 minutes past 1 morning,
 Last quarter the 11th day, at 54 minutes past midnight,
 New Moon the 19th day, at 48 minutes past 2 afternoon,
 First quarter the 26th day, at 8 minutes past 8 morning,

M	Sundays & other D remark. days	☉ rises	☉ sets	☉'s declin.	☾'s declin.	Drises & sets	☾ South	Cle bef
1	David	6 34	5 26	7 29	15 n 57	5 m 7	10 a 14	12
2	Chad	6 32	5 28	7 7	11 0	5 30	11 3	12
3		6 30	5 30	6 44	5 36	5 49	11 49	12
4	☾ Sun. in Lent	6 29	5 31	6 21	0 4	☾ rises	morn	12
5		6 27	5 33	5 58	5 s 22	7 a 46	0 34	11
6		6 25	5 35	5 34	10 28	8 59	1 19	11
7	Perpetua	6 23	5 37	5 11	15 1	10 14	2 3	11
8		6 21	5 39	4 48	18 53	11 23	2 49	11
9		6 19	5 41	4 24	21 53	morn	3 36	10
10		6 17	5 43	4 1	23 55	0 30	4 24	10
11	☾ Sun. in Lent	6 15	5 45	3 37	24 53	1 30	5 13	10
12	Gregory	6 13	5 47	3 14	24 43	2 23	6 3	9
13		6 11	5 49	2 50	23 25	3 4	6 54	9
14		6 9	5 51	2 26	20 59	3 38	7 44	9
15		6 7	5 53	2 3	17 32	4 8	8 33	9
16		6 5	5 55	1 39	13 11	4 31	9 22	8
17	St. Patrick	6 3	5 57	1 15	8 6	4 52	10 10	8
18	☾ or Midlent S.	Edm. K. W. S.	0 52	2 29	5 9	☾ sets	10 57	8
19		5 50	6 1	0 28	3 n 23	☾ sets	11 46	7
20		5 57	6 3	0 4	9 12	7 a 46	0 a 37	7
21	Benedict	5 55	6 5	0 n 20	14 35	9 12	1 30	7
22		5 53	6 7	0 43	19 10	10 36	2 26	7
23		5 51	6 9	1 7	22 33	11 56	3 25	6
24		5 49	6 11	1 30	24 28	morn	4 27	6
25	☾ S. in Lent. Ann. or Lady Day	1 54	24 45	1 7	5 28	6		
26		5 45	6 15	2 18	23 27	2 2	6 27	5
27		5 43	6 17	2 41	20 44	2 44	7 24	5
28		5 41	6 19	3 4	16 54	3 18	8 17	5
29		5 39	6 21	3 28	12 15	3 43	9 6	4
30	Cam. Term ends	5 37	6 23	3 51	7 6	4 2	9 52	4
31	Oxf. Term ends	5 35	6 25	4 14	1 43	4 19	10 37	4
Days	Day increaf.	Length of day	Helioc. long. ♀	Helioc. long. ♂	Helioc. long. ♂	Helioc. long. ⊖	Helioc. long. ♀	Helioc. long. ♂
1	3 7	10 51	20 14	26 8 25	18 5 44	10 15 53	14 57	9 3 45
7	3 31	11 15	20 26	26 56	22 23	16 53	24 37	7 7 40
13	3 55	11 39	20 37	27 29	26 4	22 52	4 11 15	10 8 53
19	4 19	12	20 48	28 1	29 46	28 50	13 52	18 11 4
25	4 43	12 27	20 59	28 33	3 29	4 47	23 27	25 25 0

1787.

March.

13

Day lig. begins	Day lig. ends	Durat. twilig.	Pl. D's node	h's latitude	4's latitude	♂'s latitude	♀'s latitude	♂'s latitude
4 43	7 17	1 55	11 31	1 5	0 50	1 3	3 n 44	1 5 46
4 30	7 30	1 56	11 12	1 6	0 49	1 6	3 4	1 8
4 17	7 43	1 57	10 53	1 7	0 48	1 8	2 25	0 9
4 5	7 56	1 58	10 34	1 7	0 47	1 10	1 47	1 n 3
3 50	8 10	2 0	10 15	1 8	0 45	1 12	1 11	2 14
☉'s longitude	D's long.	D's latitude	h's long.	4's long.	♂'s long.	♀'s long.	♂'s long.	
10 53 13	8 44	2 s 14	22 6	16 8 5	9 54	25 19	10 35	
11 53 27	22 22	3 15	22 13	16 14	10 40	26 12	12 29	
12 53 29	5 49	4 4	22 20	16 24	11 27	27 5	14 24	
13 53 29	19 2	4 39	22 27	16 34	12 13	27 58	16 19	
14 53 27	2 1	4 59	22 33	16 44	13 0	28 52	18 15	
15 53 23	14 43	5 3	22 40	16 54	13 46	29 46	20 12	
16 53 17	27 10	4 53	22 47	17 4	14 33	0 40	22 10	
17 53 10	9 22	4 29	22 54	17 14	15 19	1 35	24 8	
18 53 1	21 22	3 54	23 0	17 25	16 6	2 31	26 6	
19 52 51	3 14	3 9	23 7	17 35	16 52	3 28	28 4	
20 52 39	15 3	2 16	23 14	17 46	17 39	4 25	0 2	
21 52 25	26 54	1 17	23 20	17 56	18 25	5 23	1 59	
22 52 9	8 52	0 15	23 27	18 7	19 12	6 22	3 54	
23 51 52	21 3	0 n 50	23 33	18 18	19 58	7 21	5 48	
24 51 33	3 32	1 54	23 40	18 29	20 45	8 20	7 41	
25 51 12	16 23	2 54	23 46	18 40	21 31	9 20	9 32	
26 50 50	29 37	3 46	23 53	18 51	22 18	10 20	11 20	
27 50 26	13 16	4 26	23 59	19 2	23 4	11 20	13 5	
28 50 0	27 17	4 53	24 6	19 13	23 51	12 20	14 48	
29 49 31	11 36	5 1	24 12	19 24	24 38	13 20	15 27	
0 49 0	26 6	4 50	24 18	19 36	25 24	14 21	17 0	
1 48 27	10 40	4 21	24 24	19 47	26 11	15 22	19 28	
2 47 51	25 12	3 34	24 31	19 59	26 57	16 24	20 51	
3 47 15	9 36	2 35	24 37	20 11	27 44	17 26	22 9	
4 46 35	23 50	1 26	24 43	20 23	28 31	18 29	23 23	
5 45 53	7 51	0 13	24 49	20 35	29 18	19 31	24 29	
6 45 8	21 40	1 5	24 55	20 47	0 4	20 34	25 29	
7 44 21	5 17	2 8	25 1	20 59	0 51	21 37	26 24	
8 43 32	18 43	3 8	25 7	21 11	1 37	22 40	27 12	
9 42 40	1 57	3 57	25 13	21 23	2 24	23 43	27 51	
10 41 46	15 1	4 33	25 19	21 35	3 10	24 47	28 22	
4's sets	♂ rises	♀ rises	♂ sets	h's declin.	4's declin.	♂'s declin.	♀'s declin.	♂'s declin.
11 33	5 m 40	4 m 26	5 a 18	15 s 11	15 n 52	18 s 48	17 s 26	9 s 14
11 16	5 29	4 24	6 4	14 58	16 10	17 32	17 2	4 9
11 0	5 17	4 22	6 52	14 46	16 29	16 10	16 22	1 n 25
10 44	5 5	4 19	7 35	14 34	16 48	14 42	15 23	6 48
10 30	4 52	4 15	8 7	14 22	17 8	13 8	14 10	11 10

The LUNATIONS.

Full Moon the 2d day, at 23 minutes past 4 afternoon,
 Last quarter the 10th day, at 3 minutes past 8 evening,
 New Moon the 18th day, at 18 minutes before 1 morning,
 First quarter the 24th day, at 58 minutes past 3 afternoon.

M D	Sundays & other remark. days	☉ rises	☉ sets	☉'s declin.	☾'s declin.	☾ rises & sets	☾ South	Clock bef. ☉	
1	G Palm Sunday	5 33	6 27	4n 37	3 s 29	4 m 45	11 a 21	3 58	
2		5 31	6 29	5 1	8 47	☾ rises	morn	3 37	
3	Richard	5 29	6 31	5 24	13 28	8 a 3	o 6	3 19	
4	St. Ambrose	5 27	6 33	5 46	17 32	9 14	o 51	3 1	
5	O. La. day. Maund. Th.	5 25	6 35	6 9	20 49	10 23	1 38	2 43	
6	Good Friday	5 23	6 37	6 32	23 9	11 25	2 26	2 28	
7		5 21	6 39	6 54	24 27	morn	3 14	2 8	
8	Easter day	5 19	6 41	7 17	24 38	o 22	4 4	1 50	
9	Easter Monday	5 17	6 43	7 39	23 42	1 8	4 54	1 33	
10	Easter Tuesday	5 16	6 44	8 1	21 41	1 46	5 44	1 16	
11		5 14	6 46	8 23	18 40	2 16	6 33	1 0	
12		5 12	6 48	8 45	14 44	2 40	7 20	0 44	
13		5 10	6 50	9 7	10 2	3 1	8 7	0 28	
14		5 8	6 52	9 29	4 44	3 20	8 54	0 13	
15	G Low Sunday	5 6	6 54	9 50	on 58	3 37	9 41	cast. 2	
16		5 4	6 56	10 12	6 47	3 56	10 31	0 17	
17		5 2	6 58	10 33	12 24	4 16	11 23	0 32	
18	Ox. & Ca. T. beg.	5 0	7 0	10 54	17 24	☾ sets	o a 19	0 46	
19	Alphege	4 58	7 2	11 15	21 19	9 42	1 19	0 59	
20		4 57	7 3	11 35	23 49	10 59	2 22	1 12	
21		4 55	7 5	11 56	24 37	morn	3 26	1 28	
22	G 2 Sun. aft. Easter	4 53	7 7	12 16	23 42	o 2	4 28	1 37	
23	St. George	4 51	7 9	12 36	21 16	o 51	5 26	1 49	
24		4 49	7 11	12 56	17 38	1 24	6 21	2 1	
25	St. Mark. Pres. Ma. b. East. T. b.	4 47	7 13	13 15	13 9	1 54	7 11	2 12	
26		4 45	7 15	13 35	8 8	2 16	7 58	2 22	
27		4 44	7 16	13 54	2 52	2 32	8 43	2 32	
28		4 42	7 18	14 13	2 s 26	2 50	9 27	2 42	
29	G 3 S. aft. Easter	4 40	7 20	14 31	7 32	3 7	10 10	2 52	
30		4 38	7 22	14 50	12 16	3 23	10 54	3 0	
Days	Day increaf.	Length of day	Helioc. long. ♀	Helioc. long. ♀	Helioc. long. ♂	Helioc. long. ☉	Helioc. long. ♀	Helioc. long. ♂	h rises
1	5 11	12 55	21 1	29 8 10	7 50	11 41	4 35	2 12	4 m 3
7	5 35	13 19	21 24	29 4 11	36 17	35 14	7 28	23	4 1
13	5 57	13 41	21 35	0 11 14	15 23	23 27	3 38	20 12	3 5
19	6 21	14 52	21 46	0 46 19	10 29	19 3	7 9	11 12	3 3
25	6 43	14 27	21 58	1 18 22	58 51	11 0	12 37	26 32	3 1

1787.

April.

15

Clock
bef. ☉

cast. 2

h
rises

4 m 3

4 1

3 5

3 3

3 1

Day lig. begins	Day lig. ends	Durat. twilig.	Pl. D's node	h's latitude	☿'s latitude	♂'s latitude	♀'s latitude	♂'s latitude
3 33	8 27	2 3	9 53	1 s 9	0 s 44	1 s 15	0 n 32	3 n 8
3 17	8 43	2 3	9 34	1 10	0 43	1 16	0 2	3 6
3 2	8 50	2 11	9 14	1 11	0 42	1 17	0 s 25	2 11
2 47	9 13	2 15	8 55	1 12	0 42	1 18	0 49	0 38
2 26	9 34	2 25	8 36	1 13	0 41	1 19	1 10	1 s 0
☉'s longitude	☿'s long.	♂'s latitude	♀'s long.	h's long.	☿'s long.	♂'s long.	♀'s long.	♂'s long.
11 40 50	27 m 53	4 s 54	25 m 25	21 8 48	3 57	25 m 52	28 47	47
12 39 51	10 33	5 0 25	31 22	0 4 43	26 57	29 5		
13 38 51	23 2	4 51 25	36 2	13 5 30	28 29	15		
14 37 49	5 m 19	4 30 25	42 22	25 6 16	29 7	29 R 22		
15 36 45	17 25	3 56 25	47 22	38 7 3	0 12	29 18		
16 35 38	29 22	3 12 25	53 22	50 7 49	1 17	19 10		
17 34 30	11 12	2 20 25	58 23	3 8 36	2 23	28 56		
18 33 20	23 0	1 22 26	4 23	16 9 22	3 29	28 37		
19 32 9	41 50	0 20 26	9 23	29 10 9	4 35	28 11		
20 30 56	16 4	0 n 44	26 14	23 42 10	5 5	41 27	40	
21 29 42	28 57	1 46 26	19 23	55 11 42	6 47	27 6		
22 28 26	11 24	2 45 26	24 24	8 12 28	7 53	26 28		
23 27 8	24 18	3 38 26	29 24	21 13 15	8 59	25 47		
24 25 48	7 31	4 20 26	34 24	34 14 10	6 25	5		
25 24 27	21 16	4 40 26	39 24	47 14 48	11 13	24 22		
26 23 4	5 28	5 2 26	43 25	0 15 34	12 20	23 40		
27 21 39	20 3	4 56 26	48 25	12 16 21	13 27	22 58		
28 20 11	4 54	4 29 26	53 25	26 17 7	14 34	22 17		
29 18 44	19 52	3 45 26	57 25	40 17 54	15 41	21 57		
30 17 14	4 147	2 44 27	2 25	53 18 40	16 48	21 1		
1 15 41	19 33	1 34 27	6 26	7 19 26	17 56	20 27		
2 14 6	4 26	0 18 27	10 26	20 20 13	19 31	19 59		
3 12 29	18 14	0 s 58	17 15	26 34 20	59 20	11 19	35	
4 10 50	2 6	2 8 27	19 26	47 21 45	21 19	19 15		
5 9 9	15 38	3 9 27	23 27	1 22 31	22 27	18 57		
6 7 25	28 54	3 59 27	27 27	25 23 17	23 35	18 45		
7 5 39	11 54	4 30 27	31 27	28 24 4	24 43	18 38		
8 3 51	24 40	4 58 27	35 27	42 24 50	25 52	18 D 36		
9 2 2	7 14	5 5 27	39 27	56 25 36	27 0	18 39		
10 0 11	19 38	4 57 27	43 28	10 26 22	28 8	18 47		
☿'s sets	♂'s rises	♀'s rises	♂'s sets	h's declin.	☿'s declin.	♂'s declin.	♀'s declin.	♂'s declin.
10 a 13	4 m 40	4 m 0	8 a 16	14 s 9	17 n 31	11 s 14	12 s 24	13 n 58
9 58	4 26	4 4	7 55	13 59	17 51	9 32	10 36	14 0
9 43	4 12	3 57	7 11	13 40	18 12	7 47	8 36	12 1
9 28	3 57	3 49	6 22	13 40	18 31	5 59	6 25	9 2
9 14	3 42	3 40	5 40	13 30	18 51	4 10	4 5	6 30

The LUNATIONS.

Full Moon the 2d day, at 38 minutes past 7 morning,
 Last quarter the 10th day, at 45 minutes past 11 morning,
 New Moon the 17th day, at 43 minutes past 8 morning,
 First quarter the 23d day, at 56 minutes past midn ght,
 Full Moon the 31st day, at 16 minutes past 11 at night.

M D	Sunday. & other remark. days	☉ rises	☉ sets	☉'s declin.	D's declin.	D rises & sets	D South	Clock aft. ☉	
1	St. Philip and James	37	7 23	15 n 8	16 s 27	3 n 40	11 a 39	3 8	
2		4 35	7 25	15 26	19 54	D rises	morn	3 15	
3	Inv. of the Cross	4 33	7 27	15 44	22 29	9 a 21	0 26	3 22	
4		4 31	7 29	16 12	24 3	10 19	1 15	3 28	
5		4 30	7 30	16 19	24 31	11 11	2 5	3 34	
6	S. aft. Easter	St. John A. P. L.	16 31	23 53	11 51	2 55	3 39		
7		4 26	7 34	16 52	22 11	morn	3 44	3 44	
8		4 25	7 35	17 8	19 28	0 22	4 32	3 48	
9		4 23	7 37	17 25	15 52	0 47	5 19	3 52	
10		4 21	7 39	17 40	11 31	1 9	6 5	3 55	
11		4 20	7 40	17 56	6 33	1 27	6 50	3 57	
12	Old May Day.	4 18	7 42	18 11	1 8	1 43	7 35	3 58	
13	S. aft. Easter. Rogat. S.	7 43	18 26	4 n 30	2 1	8 22	4 0		
14		4 15	7 45	18 41	10 6	2 21	9 12	4 0	
15		4 14	7 46	18 55	15 19	2 42	10 6	4 0	
16		4 12	7 48	19 9	19 44	3 11	11 4	3 39	
17	Asc. Holy Th.	4 11	7 49	19 23	22 53	D sets	0 a 5	3 58	
18		4 9	7 51	19 36	24 24	9 a 47	1 9	3 56	
19	Q. Ch. rl. b.	Dunf.	7 52	19 49	24 6	10 43	2 14	3 54	
20	Son. aft. Ascen.	4 7	7 53	20 12	22 5	11 25	3 17	3 51	
21	Easter Term en.	4 5	7 55	20 14	18 41	11 57	4 15	3 47	
22	Frs. Eliz. born.	4 4	7 56	20 26	14 17	morn	5 8	3 44	
23		4 3	7 57	20 37	9 16	0 21	5 56	3 39	
24	Oxford Ter. en.	4 1	7 59	20 49	3 58	0 40	6 42	3 34	
25		4 0	8 0	21 0	1 s 21	0 57	7 26	3 29	
26	Augustin	3 59	8 1	21 10	6 30	1 13	8 9	3 23	
27	White Sunday	V. Bede	8 2	21 20	11 18	1 29	8 53	3 16	
28	White Monday	3 57	8 3	21 30	15 35	1 48	9 37	3 10	
29	K. Ch. rl. rest.	3 56	8 4	21 39	19 10	2 8	10 23	3 2	
30	Ember Week	3 55	8 5	21 49	21 56	2 33	11 11	2 54	
31		3 54	8 6	21 57	23 44	D rises	morn	2 46	
Days	Day increas.	Length of day	Helioc. long. h	Helioc. long. M	Helioc. long. ♂	Helioc. long. ⊖	Helioc. long. ♀	Helioc. long. ♀	h rises
1	6 13	14 27	22 9	11 50	16 46	10 58	22 5	13 6	2 m 52
7	7 25	15 9	22 20	2 22	0 34	16 46	1 34	29 42	2 30
12	7 43	15 27	22 31	1 53	4 23	22 34	11 3	17 3	2 7
18	8 15	15 45	22 43	3 25	8 11	28 20	20 32	6 1	1 49
25	8 16	16 0	22 54	3 57	12 0	4 6	0 27	38	1 22

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May.

17

Day	Day lg. begins	Day lg. ends	Durat. twilig.	Pl. D's node	h's latitude	u's latitude	δ's latitude	♀'s latitude	♀'s latitude
1	2 6	9 57	2 37	8 ^h 17	1 14	0 40	1 10	1 27	2 16
7	1 44	10 19	2 48	7 58	1 15	0 40	1 19	1 40	3 1
13	1 19	10 43	3 5	7 39	1 16	0 39	1 19	1 50	3 17
19	0 48	11 20	3 32	7 20	1 18	0 38	1 18	1 56	3 7
25	All day-light			7 1	1 19	0 38	1 17	1 59	2 35
M	☉'s longitude		D's long.	D's latitude	h's long.	u's long.	δ's long.	♀'s long.	♀'s long.
1	8 10	58 18	11 ^h 52	4 36	27 ^m 46	28 24	27 ^h 8	29 ^h 17	19 ^h 0
2	11 56	23	13 57	4 3	27 50	28 37	27 54	0 ^h 25	19 17
3	12 54	26	25 55	3 19	27 53	28 51	28 40	1 34	19 38
4	13 52	28	7 ^h 47	2 27	27 57	29 4	29 26	2 43	20 4
5	14 50	28	19 36	1 28	28 0	29 18	0 ^h 12	3 52	20 34
G	15 48	27	1 ^h 23	0 26	28 43	29 32	0 58	5 1	21 8
7	16 46	25	13 14	0 ^h 38	28 6	29 46	1 44	6 10	21 47
8	17 44	21	25 12	1 41	28 9	0 ^h 11	2 30	7 19	22 29
9	18 42	16	7 ^h 21	2 41	28 12	0 14	3 16	8 28	23 15
10	19 40	10	19 47	3 34	28 15	0 28	4 2	9 37	24 3
11	20 38	3	2 ^h 35	4 18	28 18	0 42	4 47	10 46	24 55
12	21 35	55	15 48	4 51	28 20	0 56	5 33	11 56	25 51
G	22 33	45	29 29	5 8	28 23	1 10	6 19	13 6	26 50
14	23 31	34	13 ^h 39	5 7	28 26	1 24	7 5	14 15	27 52
15	24 29	22	28 15	4 47	28 28	1 38	7 50	15 25	28 57
16	25 27	7	13 ^h 12	4 7	28 30	1 52	8 36	16 35	0 ^h 5
17	26 24	55	28 21	3 9	28 33	2 6	9 22	17 45	1 15
18	27 22	39	13 ^h 33	1 58	28 35	2 20	10 7	18 55	2 28
19	28 20	22	28 36	0 38	28 37	2 34	10 53	20 5	3 45
G	29 18	4	13 ^h 24	0 ^h 42	28 39	2 48	11 38	21 15	5 4
21	II 0	15 44	27 50	1 58	28 40	3 2	12 24	22 25	6 25
22	1 13	22	11 ^h 52	3 5	28 42	3 16	13 9	23 35	7 49
23	2 10	59	25 31	3 59	28 44	3 30	13 54	24 46	9 15
24	3 8	34	8 ^h 46	4 39	28 45	3 44	14 40	25 56	10 44
25	4 6	8	21 42	5 4	28 47	3 58	15 25	27 6	12 15
26	5 3	41	4 ^h 20	5 13	28 48	4 12	16 10	28 16	13 49
G	6 1	12	16 43	5 7	28 49	4 26	16 55	29 26	15 25
28	6 58	42	28 55	4 47	28 51	4 40	17 40	0 ^h 37	17 3
29	7 56	10	10 ^h 58	4 15	28 52	4 54	18 25	1 47	18 44
30	8 53	37	22 54	3 32	28 53	5 8	19 10	2 58	20 28
31	9 51	3	4 ^h 45	2 40	28 54	5 22	19 55	4 8	22 14
Day	☉'s sets	♂'s rises	♀'s rises	♂'s rises	h's declin.	u's declin.	δ's declin.	♀'s declin.	♀'s declin.
1	8 m 59	3 m 26	3 ^h 37	4 m 5	13 25	19 m 10	2 21	1 37	5 n 21
7	8 43	3 11	3 22	3 57	13 19	19 29	0 31	0 ^h 55	5 41
13	8 27	2 55	3 11	3 45	13 14	19 47	1 n 19	3 30	7 18
19	8 11	2 39	3 1	3 35	13 11	20 4	3 7	6 4	9 51
25	7 55	2 23	2 50	3 26	13 8	20 21	4 53	8 36	13 5

B

The LUNATIONS.

Last quarter the 8th day, at 35 minutes past 11 at night,
 New Moon the 15th day, at 50 minutes past 3 afternoon.
 First quarter the 22d day, at 45 minutes past 11 morning.
 Full Moon the 30th day, at 38 minutes past 2 afternoon.

M D	Sundays & other remark. days	☉ rises	☉ sets	☉'s declin.	☽'s declin.	☽ rises & sets	☽ South	Clock aft. ☉	
1	Nicomede	3 53	8 7	22 n 6	24 s 28	☽ rises	o m 1	2 38	
2		3 52	8 8	22 13	24 5	9 a 48	o 50	2 29	
3	Trinity Sund.	3 51	8 9	22 21	23 37	10 22	1 39	2 19	
4	K. Geo. III. born	3 50	8 10	22 28	20 8	10 49	2 27	2 10	
5	P. Errn. Aug. b. Bonita.	8 11	22 35	16 45	11 11	3 14	2		
6	Oxt. Term beg.	3 49	8 11	22 41	12 37	11 29	3 59	1 49	
7	Corpus Christi	3 48	8 12	22 47	7 53	11 47	4 43	1 38	
8	Trin. T. beg.	3 47	8 13	22 53	2 44	morn	5 28	1 27	
9		3 47	8 13	22 58	2 n 42	o 4	6 13	1 16	
10	1 Sun. aft. Trin. Pres. Am. born	4 23	3 8	11 0	21 6	59	1 4		
11	St. Barnabas	3 45	8 15	23 7	13 25	o 40	7 49	o 52	
12		3 45	8 15	23 11	18 4	1 4	8 43	o 40	
13		3 44	8 16	23 15	21 43	1 36	9 41	o 27	
14		3 44	8 16	23 18	23 57	2 15	10 44	o 15	
15		3 44	8 16	23 20	24 26	☽ sets	11 50	o 2	
16		3 44	8 16	23 23	23 6	9 a 16	o a 54	obe. 11	
17	2 Sun. aft. Trin. St. Alb.	8 17	23 25	20 9	9 50	1 55	o 24		
18		3 43	8 17	23 26	15 57	10 17	2 52	o 37	
19		3 43	8 17	23 27	10 57	10 39	3 44	o 50	
20	Transf. Ed. KWS	3 43	8 17	23 28	5 33	10 58	4 33	1 3	
21	Longest day	3 43	8 17	23 28	o 4	11 15	5 19	1 16	
22		3 43	8 17	23 28	5 s 15	11 30	6 2	1 29	
23		3 43	8 17	23 27	10 12	11 48	6 45	1 42	
24	3 Sun. aft. Trin. Nativ. J. Bap.	17 23	26 14	38 morn	7 30	1 55			
25		3 43	8 17	23 25	18 24	o 8	8 16	2 7	
26		3 44	8 16	23 23	21 22	o 32	9 3	2 20	
27	Trin. Term end	3 44	8 16	23 21	23 24	1 1	9 51	2 32	
28		3 44	8 16	23 18	24 24	1 39	10 40	2 45	
29	St. Peter	3 44	8 16	23 15	24 17	2 25	11 30	2 57	
30		3 45	8 15	23 12	23 4	☽ rises.	morn	3 9	
☽	Day increas.	Length of day	Helioc. long. ♀	Helioc. long. ♀	Helioc. long. ♂	Helioc. long. ☉	Helioc. long. ♀	Helioc. long. ♀	h rises
1	8 30	16 14	23 7	4 34	16 25	10 48	11 8	27 53	o m 58
7	8 40	16 24	23 18	5 6	20 12	10 33	20 39	29 22	o 33
13	8 44	16 30	23 30	5 37	23 59	22 17	o 11	5 11	o 8
19	8 50	16 34	23 41	6 9	27 44	28 0	9 44	13 12	11 a 43
25	8 50	16 34	23 52	6 21	1 28	3 44	19 18	17 26	11 17

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June.

19

Day lig.	Day lig.	Durat.	Pl. D's	h's	u's	♂'s	♀'s	♂'s
begins	ends	twilig.	node	latitude	latitude	latitude	latitude	latitude
1			6 ^h 39	1 20	0 37	1 15	1 58	1 35
7			6 20	1 21	0 37	1 14	1 54	0 31
13	No	real	6 1	1 23	0 36	1 12	1 47	0 33
19			5 42	1 24	0 36	1 9	1 39	1 24
25			5 23	1 25	0 36	1 6	1 27	1 51
M	☉'s	D's	D's	h's	u's	♂'s	♀'s	♂'s
D	longitude	long.	latitude	long.	long.	long.	long.	long.
1	11 10 48 28	16 4 34	1 41	28 55	5 36	20 39	5 19	24 8 3
2	11 45 52	28 22	0 38	28 55	5 50	21 24	6 29	25 54
G	12 43 16	10 4 13	0 28	28 56	6 4	22 9	7 40	27 47
4	13 40 39	22 7	1 32	28 56	6 18	22 54	8 51	29 41
5	14 38 1	4 10	2 33	28 56	6 32	23 38	10 2	1 37
6	15 35 23	16 24	3 28	28 57	6 46	24 23	11 13	3 37
7	16 32 44	28 52	4 15	28 57	7 0	25 8	12 24	5 40
8	17 30 5	11 40	4 50	28 57	7 14	25 52	13 35	7 44
9	18 27 26	24 50	5 11	28 57	7 28	26 36	14 46	9 50
G	19 24 46	8 25	5 16	28 57	7 42	27 21	15 57	11 57
11	20 22 6	22 25	5 3	28 57	7 56	28 5	17 8	14 5
12	21 19 25	6 52	4 30	28 56	8 10	28 49	18 19	16 14
13	22 16 44	21 40	3 39	28 56	8 24	29 33	19 30	18 25
14	23 14 3	6 44	2 32	28 56	8 38	0 8 17	20 41	20 36
15	24 11 21	21 55	1 13	28 55	8 52	1 5	21 52	22 48
16	25 8 39	7 4	0 10	28 54	9 5	1 45	23 4	25 0
G	26 5 56	22 1	1 32	28 54	9 19	2 29	24 15	27 12
18	27 3 13	6 39	2 46	28 53	9 33	3 13	25 26	29 24
19	28 0 29	20 53	3 48	28 52	9 46	3 57	26 38	1 34
20	28 57 44	4 41	4 34	28 51	10 0	4 41	27 49	3 44
21	29 54 59	18 2	5 4	28 50	10 13	5 24	29 1	5 52
22	30 52 13	0 59	5 17	28 49	10 27	6 8	0 12	7 59
23	1 49 26	13 36	5 14	28 47	10 40	6 52	1 24	10 5
G	2 46 39	25 55	4 57	28 46	10 54	7 35	2 35	12 9
25	3 43 51	8 1	4 27	28 44	11 7	8 18	3 47	14 11
26	4 41 3	19 58	3 46	28 43	11 21	9 2	4 58	16 11
27	5 38 14	1 49	2 55	28 41	11 34	9 45	6 10	18 9
28	6 35 25	13 37	1 57	28 39	11 48	10 28	7 22	20 7
29	7 32 35	25 26	0 54	28 37	12 1	11 11	8 34	22 2
30	8 29 46	7 17	0 11	28 35	12 14	11 54	9 46	23 55
Day's	u's	♂	♀	♂	u's	♂	♀	♂
rises	rises	rises	rises	declin.	declin.	declin.	declin.	declin.
1	3 m 41	2 m 4	2 m 37	3 19	13 7	20 n 39	6 n 55	11 n 27
7	3 21	1 48	2 26	3 20	13 7	20 54	8 36	13 46
13	3 0	1 32	2 17	3 29	13 9	21 8	10 13	15 54
19	2 40	1 15	2 9	sets	13 12	21 21	11 46	17 50
25	2 19	0 58	2 4	9 a 12	13 15	21 33	13 14	19 31
								24 33

The LUNATIONS.

Last quarter the 7th day, at 6 minutes past 8 evening.
 New Moon the 14th day, at 58 minutes past 10 night.
 First quarter the 22d day, at 8 minutes past 1 morning.
 Full Moon the 30th day, at 7 minutes past 5 morning

M D	Sundays & other remark. days	☉ rises	☉ sets	☉'s declin.	☾'s declin.	☾ rises & sets	☾ South	Clock bef. ☉	
1	4 Sun. aft. Trin	3 45	8 15	23 n 8	20 s 49	8 a 46	o m 19	3 20	
2	Vinit. of B. V. M.	3 46	8 14	23 4	17 37	9 10	1 6	3 31	
3	Cam. Com. Dog days b.	8 14	22 59	13 38	9 31	1 52	3 43	3	
4	Transf. St. Mart.	3 47	8 13	22 54	9 2	9 49	2 37	3 53	
5	O. Midsum. day	3 48	8 12	22 48	3 59	10 6	3 21	4	
6	Cam. T. ends	3 48	8 12	22 42	1 n 20	10 22	4 5	4 14	
7	Thos. a Becket	3 49	8 11	22 36	6 42	10 40	4 50	4 24	
8	5 Sun. aft. Trin	3 50	8 10	22 30	11 54	11 0	5 37	4 34	
9	Oxford Act	3 51	8 9	22 23	16 38	11 29	6 27	4 43	
10		3 51	8 9	22 15	20 32	morn	7 22	4 52	
11		3 52	8 8	22 7	23 16	0 2	8 21	5 0	
12		3 53	8 7	21 59	24 27	0 48	9 23	5 8	
13		3 54	8 6	21 50	23 54	1 50	10 27	5 15	
14	Oxf. T. ends	3 55	8 5	21 42	21 38	☾ sets	11 31	5 22	
15	6 Sun. aft. Trin	Swith.	8 4	21 32	17 55	8 a 13	0 a 31	5 29	
16		3 56	8 2	21 23	13 8	8 37	1 26	5 35	
17		3 59	8 1	21 12	7 44	8 56	2 17	5 41	
18		4 0	8 0	21 2	2 7	9 15	3 6	5 46	
19		4 1	7 59	20 51	3 s 25	9 32	3 52	5 50	
20	Margaret	4 2	7 58	20 40	8 38	9 50	4 37	5 54	
21		4 4	7 56	20 29	13 20	10 8	5 22	5 57	
22	7 Sun. aft. Trin	Magda.	7 55	20 17	17 22	10 32	6 8	6 0	
23		4 5	7 54	20 5	20 36	10 59	6 55	6 2	
24		4 7	7 53	19 52	22 55	11 34	7 43	6 4	
25	St. James	4 9	7 51	19 39	24 13	morn	8 32	6 5	
26	St. Anne	4 10	7 50	19 26	24 25	0 17	9 22	6 5	
27		4 12	7 48	19 13	23 30	1 10	10 11	6 5	
28		4 13	7 47	18 59	21 31	2 11	11 0	6 4	
29	8 Sun. aft. Trin	4 15	7 45	18 45	18 34	3 19	11 47	6 3	
30		4 16	7 44	18 31	14 45	☾ rises	morn	6 0	
31		4 18	7 42	18 16	10 15	7 a 53	0 33	5 58	
Days	Day decreas.	Length of day	Helioc. long. ♀	Helioc. long. ☿	Helioc. long. ♂	Helioc. long. ☾	Helioc. long. ♀	Helioc. long. ☿	h rises
1	0 5	16 29	24 4	7 11	5 11	9 27	28 53	10 7	10 a 52
7	0 12	16 22	24 15	7 44	8 53	15 10	8 29	0 51	10 27
13	0 22	16 12	24 26	8 16	12 33	20 54	18 6	0 12	10 2
19	0 36	15 58	24 38	8 47	16 11	26 37	27 44	18 7	9 37
25	0 52	15 42	24 49	9 19	19 48	2 21	7 23	4 58	0 12

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July.

21

Clock
ref. ☉

Day	Day lig. begins	Day lig. ends	Durat. twilig.	Pl. D's node	h's latitude	u's latitude	♂'s latitude	♀'s latitude	♂'s latitude
1				5 ^h 3	1 s 26	0 s 35	1 s 3	1 s 13	1 n 51
7	All	day -	light	4 44	1 27	0 35	1 0	1 0	1 29
13				4 25	1 28	0 35	0 56	0 44	0 48
19				4 6	1 29	0 35	0 52	0 28	0 s 8
25	0 45	11 7	3 20	3 47	1 30	0 34	0 48	0 12	1 15
M	☉'s longitude	D's long.	D's latitude	h's long.	u's long.	♂'s long.	♀'s long.	♂'s long.	♀'s long.
3 20	G 9 26 56	19 14	1 17	28 32	12 27	12 8 37	10 11 58	25 46	46
3 31	2 10 24 7	1 18	2 20	28 30	12 40	13 20	12 10 27	35	35
3 43	3 11 21 18	13 31	3 17	28 28	12 53	14 3	13 22 19	21	21
3 53	4 12 18 29	25 55	4 6	28 25	13 6	14 45	14 34	1 0	0
4 4	5 13 15 40	8 33	4 44	28 23	13 19	15 28	15 46	2 42	42
4 14	6 14 12 52	21 27	5 8	28 21	13 32	16 10	16 58	4 30	30
4 24	7 15 10 4	4 39	5 17	28 18	13 45	16 52	18 10	6 7	7
4 34	G 16 7 17	18 11	5 9	28 16	13 58	17 35	19 22	7 43	43
4 43	9 17 4 30	2 8 3	4 43	28 13	14 11	18 17	20 34	9 18	18
4 52	10 18 1 44	16 15	3 59	28 10	14 24	18 59	21 46	10 51	51
5 0	11 18 58 59	0 11 47	3 0	28 7	14 37	19 41	22 58	12 21	21
5 8	12 19 56 14	15 33	1 47	28 4	14 50	20 23	24 10	13 49	49
5 15	13 20 53 30	0 30	0 26	28 1	15 2	21 5	25 23	15 15	15
5 22	14 21 50 46	15 28	0 56	27 58	15 15	21 47	26 35	16 39	39
5 29	G 22 48 2	0 21	2 15	27 54	15 27	22 29	27 47	18 0	0
5 35	16 23 45 19	14 59	3 23	27 51	15 40	23 10	29 0	19 20	20
5 41	17 24 42 37	29 17	4 16	27 47	15 52	23 52	0 12	20 37	37
5 46	18 25 39 55	13 10	4 53	27 44	16 4	24 34	1 25	21 52	52
5 50	19 26 37 13	26 37	5 12	27 41	16 16	25 15	2 50	23 5	5
5 54	20 27 34 31	9 38	5 15	27 38	16 28	25 56	3 58	24 15	15
5 57	21 28 31 49	22 17	5 12	27 34	16 40	26 37	5 3	25 23	23
6 0	G 29 29 8	4 36	4 35	27 30	16 52	27 18	6 16	26 28	28
6 2	23 0 26 27	16 40	3 56	27 26	17 4	27 59	7 29	27 30	30
6 4	24 1 23 46	28 35	3 8	27 22	17 16	28 40	8 42	28 29	29
6 5	25 2 21 6	10 24	2 12	27 18	17 28	29 21	9 55	29 27	27
6 5	26 3 18 26	22 12	1 10	27 14	17 40	0 11	11 8	0 12	12
6 5	27 4 15 47	4 3	0 6	27 10	17 51	0 42	12 21	1 12	12
6 4	28 5 13 8	16 1	0 n 59	27 6	18 3	1 22	13 34	1 59	59
6 3	G 6 10 30	28 7	2 3	27 2	18 14	2 2	14 47	2 43	43
6 0	30 7 7 53	10 24	3 1	26 58	18 26	2 43	16 0	3 23	23
6 58	31 8 5 17	22 52	3 52	26 54	18 37	3 23	17 13	3 59	59
Days	u's rises	♂'s rises	♀'s rises	♂'s sets	h's declin.	u's declin.	♂'s declin.	♀'s declin.	♂'s declin.
1	1 m 58	0 m 43	1 m 59	9 a 25	13 s 21	21 n 44	14 n 37	20 n 54	22 n 50
7	1 38	0 27	1 5	9 25	13 27	21 54	15 56	21 57	20 12
13	1 18	0 12	2 0	9 17	13 34	22 3	17 9	22 39	17 3
19	0 58	11 a 57	2 5	9 2	13 42	22 11	18 15	22 58	13 43
25	0 38	11 42	2 12	8 44	13 50	22 19	19 15	22 54	10 30

The LUNATIONS.

Last quarter the 6th day, at 36 minutes past 2 afternoon.

New Moon the 13th day, at 6 minutes past 7 morning.

First quarter the 20th day, at 26 minutes past 5 afternoon.

Full Moon the 28th day, at 19 minutes past 6 evening,

M	Sundays & other remark. days	☉ rises	☉ sets	☉'s declin.	☾'s declin.	☾ rises & sets	☾ South	Clock bef. ☉	
1	Lammas day	4 19	7 41	18 n 1	5 s 16	8 a 11	1 m 18	5 54	
2		4 21	7 39	17 46	on 1	8 28	2 1	5 51	
3		4 22	7 38	17 30	5 24	8 44	2 48	5 46	
4		4 24	7 36	17 14	10 37	9 5	3 34	5 41	
G 5	Sun. aft. Trin.	4 26	7 34	16 58	15 25	9 30	4 22	5 36	
6	Transfiguration	4 27	7 33	16 42	19 29	10 0	5 15	5 29	
7	Prs. Ameliaborn	N. of Jesus	31	16 25	22 30	10 42	6 11	5 23	
8		4 31	7 29	16 8	24 10	11 36	7 11	5 15	
9		4 32	7 28	15 51	24 14	morn	8 13	5 7	
10	St. Laurence	4 34	7 26	15 33	22 39	0 44	9 15	4 59	
11	Prs. Brunf. born	Dogd. e.	7 24	15 15	19 34	2 3	10 15	4 50	
G 12	S. aft. Trin.	Fr. of W. b.	O. Lam. d.	15 15	3 27	11 12	4 41		
13		4 39	7 21	14 39	10 7	☾ sets	0 a 6	4 30	
14		4 41	7 19	14 21	4 32	7 a 19	0 56	4 20	
15	Assumption	4 43	7 17	14 2	1 s 8	7 39	1 44	4 9	
16	D. York born	4 45	7 15	13 43	6 35	7 57	2 31	3 57	
17		4 46	7 14	13 24	11 35	8 17	3 17	3 45	
18		4 48	7 12	13 5	15 56	8 38	4 4	3 32	
G 19	S. aft. Trin.	4 50	7 10	12 45	19 29	9 3	4 51	3 19	
20		4 52	7 8	12 25	22 8	9 37	5 40	3 5	
21	Pr. W. Hen. b.	4 54	7 6	12 6	23 46	10 16	6 29	2 51	
22		4 55	7 5	11 45	24 19	11 6	7 19	2 36	
23		4 57	7 3	11 25	23 47	morn	8 8	2 21	
24	St. Bartholow.	4 59	7 1	11 5	22 9	0 5	8 58	2 5	
25		5 1	6 59	10 44	19 31	1 8	9 46	1 40	
G 26	S. aft. Trin.	5 3	6 57	10 23	15 59	2 18	10 33	1 32	
27		5 5	6 55	10 2	11 41	3 31	11 18	1 16	
28	St. Augustine	5 7	6 53	9 41	6 48	☾ rises	morn	0 58	
29	Behead. J. Bap.	5 9	6 51	9 20	1 31	6 a 40	0 4	0 41	
30		5 10	6 50	8 58	3 n 54	6 59	0 50	0 23	
31		5 12	6 48	8 37	9 14	7 18	1 37	0 4	
Days	Day decreas.	Length of day	Helioc. long. ♀	Helioc. long. ☿	Helioc. long. ♂	Helioc. long. ☿	Helioc. long. ♀	Helioc. long. ♂	h rises
1	1 12	15 22	25 2	9 11	56 23	59 9	3 18	11 40	24 13
7	1 31	15 3	25 14	10 27	27 31	14 48	28 21	11 15	8 24
13	1 51	14 43	25 25	10 59	18 20	20 33	8 25	4 29	35 7
19	2 13	14 21	25 36	11 30	4 31	26 20	17 47	20 2	7 34
25	2 35	13 59	25 48	12 2	7 58	2 7	27 32	14 18	7 10

e.

1787.

August.

23

Clock
bef. ☉

5 54

5 51

5 46

5 41

5 36

5 29

5 23

5 15

5 7

4 59

4 50

4 41

4 30

4 20

4 9

3 52

3 45

3 32

3 19

3 5

2 51

2 36

2 21

2 5

1 49

32

16

58

41

23

4

h

iles

a 49

24

59

34

10

Day	Day lig. begins	Day lig. ends	Durat. twilig.	Pl. ☉'s node	h's latitude	☿'s latitude	♂'s latitude	♀'s latitude	♂'s latitude
1	1 23	10 34	2 58	3 25	1 31	0 34	0 42	0 n 6	2 s 40
7	1 47	10 13	2 46	3 6	1 32	0 34	0 37	0 22	3 49
13	2 9	9 51	2 34	2 47	1 33	0 34	0 32	0 36	4 36
19	2 29	9 30	2 25	2 28	1 33	0 34	0 26	0 49	4 35
25	2 47	9 13	2 18	2 9	1 34	0 34	0 20	1 0	3 29

M	☉'s longitude	☿'s long.	♂'s latitude	h's long.	☿'s long.	♂'s long.	♀'s long.	♂'s long.
D								
1	♌ 9 2 42	♌ 34	4 n 32	26 50	18 48	4 11 3	18 26	4 31
2	♌ 10 0 8	♌ 29	4 59	26 46	18 59	4 43	19 39	4 57
3	♌ 10 57 35	♌ 38	5 11	26 42	19 10	5 23	20 52	5 20
4	♌ 11 55 4	♌ 0	5 6	26 38	19 21	6 22	22 5	5 42
G	♌ 12 52 34	♌ 36	4 45	26 34	19 32	6 42	23 18	5 58
6	♌ 13 50 5	♌ 25	4 6	26 30	19 43	7 22	24 31	6 8
7	♌ 14 47 38	♌ 28	3 12	26 25	19 53	8 12	25 44	6 10
8	♌ 15 45 12	♌ 43	2 6	26 21	20 4	8 40	26 57	6 8
9	♌ 16 42 48	♌ 9	0 51	26 16	20 14	9 19	28 11	6 2
10	♌ 17 40 24	♌ 42	0 s 28	26 12	20 25	9 58	29 24	5 51
11	♌ 18 38 3	♌ 18	1 45	26 7	20 35	10 37	30 38	5 34
G	♌ 19 35 43	♌ 52	2 55	26 3	20 45	11 16	1 51	5 11
13	♌ 20 33 24	♌ 17	3 53	25 58	20 55	11 55	3 5	4 42
14	♌ 21 31 7	♌ 27	4 36	25 54	21 5	12 33	4 18	4 8
15	♌ 22 28 50	♌ 16	5 0	25 49	21 15	13 12	5 32	3 31
16	♌ 23 26 36	♌ 43	5 8	25 45	21 24	13 50	6 45	2 49
17	♌ 24 24 22	♌ 45	4 57	25 40	21 34	14 28	7 59	2 3
18	♌ 25 22 9	♌ 25	4 36	25 36	21 44	15 6	9 13	1 13
G	♌ 26 19 57	♌ 45	4 0	25 31	21 53	15 44	10 27	0 20
20	♌ 27 17 47	♌ 49	3 14	25 27	22 2	16 22	11 40	29 27
21	♌ 28 15 37	♌ 43	2 21	25 22	22 11	16 59	12 54	28 33
22	♌ 29 13 29	♌ 32	1 21	25 18	22 20	17 37	14 8	27 41
23	♌ 0 11 22	♌ 21	0 19	25 13	22 29	18 14	15 22	26 54
24	♌ 1 9 16	♌ 15	0 n 45	25 9	22 38	18 51	16 36	26 5
25	♌ 2 7 11	♌ 18	1 48	25 4	22 46	19 28	17 50	25 18
G	♌ 3 5 8	♌ 34	2 46	25 0	22 56	20 5	19 42	24 38
27	♌ 4 3 6	♌ 4	3 38	24 55	23 5	20 41	20 18	24 5
28	♌ 5 1 5	♌ 51	4 19	24 51	23 15	21 18	21 32	23 39
29	♌ 5 59 6	♌ 54	4 48	24 46	23 24	21 54	22 46	23 19
30	♌ 6 57 10	♌ 12	5 2	24 42	23 34	22 31	24 0	23 8
31	♌ 7 55 14	♌ 43	5 0	24 37	23 43	23 7	25 14	23 6

Days	☿'s rises	♂'s rises	♀'s rises	♂'s sets	h's declin.	☿'s declin.	♂'s declin.	♀'s declin.	♂'s declin.
1	om 16	11 a 27	2 m 24	8 a 17	14 s 1	22 n 25	20 n 17	22 n 18	7 n 23
7	11 a 56	11 15	2 38	7 50	14 10	22 31	21 32	21 23	5 43
13	11 37	11 4	2 54	7 20	14 20	22 35	21 43	20 4	5 31
19	11 17	10 54	3 13	6 49	14 30	22 39	22 16	18 26	7 5
25	10 58	10 45	3 33	rises	14 39	22 42	22 43	16 28	9 50

The LUNATIONS.

Last quarter the 4th day, at 21 minutes past 8 evening.
 New Moon the 11th day, at 8 minutes past 5 afternoon.
 First quarter the 19th day, at 9 minutes past noon.
 Full Moon the 27th day, at 20 minutes past 6 morning.

M D	Sundays & other remark. days	☉ rises	☉ sets	☉'s declin.	☿'s declin.	☿ rises & sets	☿ South	Clock aft. ☉
1	Giles	5 14	6 46	8 n 15	14 n 11	7 a 41	2 m 26	0 14
		Lond. bur. 1666		7 53	18 27	8 11	3 18	0 33
3	13 S. aft. Trin.	5 16	6 44	7 51	21 43	8 49	4 13	0 52
4		5 18	6 42	7 9	23 42	9 37	5 11	1 12
5		5 20	6 40	6 46	24 11	10 39	6 11	1 31
6		5 22	6 38	6 24	23 6	11 53	7 12	1 51
7	Enurchus	5 24	6 36	6 2	20 33	morn	8 12	2 11
8	Nativ. of V. M.	5 26	6 34	5 39	16 45	1 14	9 9	2 31
		5 28	6 32	5 16	12 1	2 35	10 2	2 52
10	14 S. aft. Trin.	5 30	6 30	4 54	6 42	3 57	10 53	3 12
11		5 32	6 28	4 31	1 8	☿ sets	11 42	3 33
12		5 34	6 26	4 8	4 23	6 a 8	12 29	3 53
13		5 35	6 25	3 45	9 34	6 27	1 16	4 14
14	Holy Cross	5 37	6 23	3 22	14 12	6 47	2 3	4 35
15		5 39	6 21	2 59	18 6	7 14	2 51	4 56
16	15 S. aft. Trin.	5 41	6 19	2 35	21 6	7 45	3 40	5 17
17	Lambert	5 43	6 17	2 12	23 5	8 22	4 30	5 38
18		5 45	6 15	1 49	24 1	9 8	5 20	5 59
19		5 47	6 13	1 26	23 51	10 1	6 9	6 20
20	Ember Week	5 49	6 11	1 2	22 36	11 3	6 58	6 41
21		5 51	6 9	0 59	20 21	morn	7 47	7 1
22	St. Matthew	5 53	6 7	0 15	11 10	0 11	8 34	7 22
	K. G. III. crow.	5 55	6 5	0 8	8 13	1 21	9 20	7 43
24	16 S. aft. Trin.	5 59	6 3	0 31	8 31	2 34	10 6	8 4
25		6 1	5 59	0 55	3 23	3 48	10 52	8 24
26	St. Cyprian	6 3	5 57	1 18	2 n 1	5 4	11 39	8 44
27		6 5	5 55	1 42	7 28	☿ rises	morn	9 5
28		6 7	5 53	2 5	12 37	5 a 55	0 29	9 25
29	17 S. aft. Trin	6 9	5 51	2 29	17 11	6 26	1 21	9 44
30	St. Michael Pro. Ch. Aug. Mat. b	6 11	5 49	2 52	20 47	7 0	2 16	10 4
Day	Day decreaf.	Length of day	Helioc. long. ♀	Helioc. long. ♂	Helioc. long. ♂	Helioc. long. ☉	Helioc. long. ♀	☿ sets
1	3	213 32	26 1	12 11 38	11 8 57	8 53	8 54	18 27
7	3	213 9	26 12	13 10	15 19	15 41	18 39	23 8 20
13	3	48 12 46	26 24	13 41	18 40	20 33	18 25	12 0
19	4	12 12 22	26 35	14 13	21 58	26 25	8 10	6 45
25	4	36 11 58	26 46	14 44	25 15	2 18	17 54	7 17

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September.

25

Day	Day lig. begins	Day lig. ends	Durat. twilig.	Pl. D's node	h's latitude	u's latitude	d's latitude	q's latitude	g's latitude
1	3 7	8 53	2 11	17P46	1 s 34	0 s 34	0 s 13	1 n 11	1 s 22
7	3 24	8 30	2 6	1 27	1 34	0 34	0 6	1 18	0 n 18
13	3 37	8 23	2 4	1 8	1 34	0 31	0 n 1	1 23	1 24
19	3 52	8 8	2 1	0 49	1 34	0 34	0 9	1 25	1 50
25	4 5	7 55	2 0	0 30	1 34	0 34	0 17	1 25	1 45
M D	☉'s longitude		D's long.	D's latitude	h's long.	u's long.	d's long.	q's long.	g's long.
1	8	53 21	25P25	4 n 40	24W33	23 11 43	23 11 43	26S28	23S12
G	9	51 30	9 15	4 4	24 29	23 52	24 19	27 42	23 26
3	10	49 41	23 12	3 14	24 25	24 0	24 54	28 57	23 49
4	11	47 53	7 11 4	2 11	24 20	24 7	25 29	0 11 11	24 21
5	12	46 8	21 21	1 0	24 16	24 14	26 5	1 26	25 1
6	13	44 25	5 16 30	0 s 15	24 12	24 20	26 40	2 40	25 47
7	14	42 44	19 42	1 30	24 8	24 26	27 15	3 55	26 46
8	15	41 6	3 15 3	2 38	24 4	24 33	27 50	5 9	27 50
G	16	39 29	18 1	3 36	24 0	24 39	28 25	6 23	28 59
10	17	37 55	2 12 3	4 21	23 56	24 46	28 59	7 38	0 12 15
11	18	36 22	15 53	4 49	23 52	24 53	29 34	8 52	1 37
12	19	34 52	29 28	5 1	23 48	24 59	0 10 8	10 6	3 4
13	20	33 23	12 44 4	4 56	23 44	25 4	0 42	11 21	4 36
14	21	31 56	25 40	4 35	23 40	25 10	1 16	12 35	6 12
15	22	30 31	8 17	4 2	23 36	25 15	1 49	13 50	7 51
G	23	29 7	20 35	3 18	23 33	25 21	2 22	15 4	9 32
17	24	27 45	2 43 9	2 25	23 29	25 26	2 55	16 19	11 15
18	25	26 25	14 33	1 27	23 26	25 31	3 28	17 34	13 1
19	26	25 7	26 21	0 26	23 23	25 36	4 1	18 49	14 49
20	27	23 50	8 10	0 n 37	23 20	25 41	4 34	20 13	16 38
21	28	22 34	20 5	1 38	23 16	25 45	5 6	21 18	18 27
22	29	21 21	2 10	2 36	23 13	25 49	5 38	22 33	20 17
G	30	20 9	14 32	3 28	23 10	25 54	6 9	23 48	22 7
24	1	18 59	27 12	4 11	23 7	25 58	6 40	25 3	23 57
25	2	17 51	10 14	4 42	23 4	26 2	7 11	26 18	25 46
26	3	16 44	23 36	4 58	23 1	26 6	7 42	27 32	27 35
27	4	15 40	7 17	4 58	22 58	26 9	8 12	28 47	29 24
28	5	14 37	21 14	4 41	22 55	26 12	8 43	0 2	1 13
29	6	13 38	5 22	4 6	22 53	26 15	9 13	1 17	3 1
G	7	12 40	19 36	3 15	22 50	26 18	9 43	2 32	4 49
Days	☿'s riles	♂'s riles	♀'s riles	♂'s riles	h's declin.	u's declin.	d's declin.	q's declin.	g's declin.
1	10 a 36	10 a 36	3 m 57	3 m 48	14 s 50	22 n 45	23 n 7	13 n 40	12 n 30
7	10 16	10 27	4 18	3 42	14 58	22 47	23 21	11 18	12 54
13	9 57	10 19	4 38	4 2	15 6	22 49	23 29	8 36	11 8
19	9 38	10 12	4 59	4 34	15 13	22 50	23 34	5 44	7 41
25	9 19	10 5	5 20	5 15	15 19	22 51	23 34	2 47	3 18

The LUNATIONS.

Last quarter the 4th day, at 30 minutes past 2 morning.

New Moon the 11th day, at 53 minutes past 5 morning.

First quarter the 19th day, at 8 morning.

Full Moon the 26th day, at 34 minutes past 5 afternoon.

M D	Sundays & other remark. days	☉ rises	☉ sets	☉'s declin.	☽'s declin.	☽ rises & sets	☽ South	Clock aft. ☉	
1	Remigius	6 13	5 47	3 s 15	23 12 6	7 a 45	3 m 15	10 23	
2		6 15	5 45	3 39	23 57	8 43	4 15	10 42	
3		6 17	5 43	4 2	23 13	9 53	5 16	11 0	
4		6 19	5 41	4 25	21 2	11 8	6 15	11 18	
5		6 21	5 39	4 48	17 26	morn	7 12	11 36	
6	Faith	6 23	5 37	5 11	13 12	0 31	8 6	11 53	
7	18 S. aft. Trin.	6 25	5 35	5 34	8 11	1 51	8 56	12 10	
8		6 27	5 33	5 57	2 49	3 9	9 44	12 27	
9	St. Denys	6 28	5 32	6 20	2 s 35	4 26	10 31	12 43	
10	Ox. & Cam. T. b.	O. Mic	Da. 30	6 43	7 48	5 42	11 18	12 58	
11		6 32	5 28	7 6	12 34	☽ sets	0 a 5	13 14	
12		6 34	5 26	7 29	16 41	5 a 25	0 52	13 28	
13	Tr. K. Edward	Con. 36	5 24	7 51	19 59	5 53	1 40	13 42	
14	19 S. aft. Trin.	6 38	5 22	8 14	12 19	6 27	2 30	13 56	
15		6 40	5 20	8 36	23 35	7 10	3 20	14 9	
16		6 42	5 18	8 58	23 46	8 0	4 10	14 22	
17	Etheldred	6 44	5 16	9 20	22 52	9 0	4 59	14 34	
18	St. Luke	6 46	5 14	9 42	20 58	10 3	5 46	14 45	
19		6 48	5 12	10 4	18 8	11 11	6 33	14 56	
20		6 50	5 10	10 25	14 31	morn	7 19	15 6	
21	20 S. aft. Trin.	6 52	5 8	10 47	10 11	0 22	8 4	15 15	
22		6 54	5 6	11 8	5 19	1 34	8 49	15 24	
23		6 55	5 5	11 29	0 5	2 48	9 35	15 33	
24		6 57	5 3	11 50	5 n 19	4 3	10 23	15 40	
25	K. Geo. III. acc	Crisp 59	5 1	12 11	10 37	5 22	11 14	15 47	
26	K. Geo. III. Pro.	7 1	4 59	12 32	15 28	☽ rises	morn	15 53	
27		7 3	4 57	12 52	19 31	5 a 1	0 9	15 59	
28	21 S. aft. Trin	St. Sim. & Jude	13 12	22 21	5 45	1 8	16 3		
29		7 7	4 53	13 32	23 40	6 41	2 10	16 7	
30		7 9	4 51	13 52	23 21	7 48	3 13	16 10	
31		7 10	4 50	14 12	21 28	9 5	4 14	16 13	
Days	Day decreaf.	Length of day	Helioc. long. ♀	Helioc. long. ♀	Helioc. long. ♂	Helioc. long. ☉	Helioc. long. ♀	Helioc. long. ♂	h sets
1	4 49	11 35	16 58	15 11	28 8	29 8	27 12	27 38	2 m 17
7	5 23	11 11	27 9	15 46	11 14	14 7	7 20	23 43	1 54
13	5 46	10 48	27 20	16 17	4 52	20 4	17 2	12 20	1 31
19	6 9	10 25	27 32	16 48	8 0	26 2	26 41	29 29	1 8
25	6 32	10 2	27 43	17 20	11 7	28 1	6 m 19	16 1	0 45

1787.

October.

27

Days	Day lig. begins	Day lig. ends	Durat. twilig.	Pl. D's node	h's latitude	u's latitude	δ's latitude	♀'s latitude	♂'s latitude
1	4 18	7 42	1 59	0° 51	1 33	0 34	0 n 26	1 n 23	1 n 22
7	4 31	7 29	1 58	29 52	1 33	0 34	0 36	1 19	0 48
13	4 43	7 17	1 57	29 33	1 33	0 34	0 46	1 12	0 8
19	4 55	7 5	1 57	29 14	1 32	0 33	0 56	1 4	0 33
25	5 6	6 54	1 58	28 55	1 32	0 33	1 8	0 53	1 12

M	☉'s longitude	D's long.	D's latitude	h's long.	u's long.	δ's long.	♀'s long.	♂'s long.
D								

1	8 11 44	3 11 51	2 n 12	22 48	26 11 21	10 13	3 47	6 35
2	9 10 51	18 5	1 122	46 26	23 10 42	5 2	8 21	
3	10 10 0	28 15	0 8 13	22 44 26	25 11 11	6 17	10 6	
4	11 9 11	16 19	1 27 22	41 26	27 11 40	7 32	11 50	
5	12 8 25	0 18	2 35 23	39 26	26 12 8	8 47	13 34	

6	13 7 42	14 10	3 33 22	37 26	31 12 37	10 21	15 17	
G	14 7 1	27 55	4 18 22	35 26	33 13 6	11 17	16 59	
8	15 6 22	11 31	4 47 23	33 26	34 13 34	12 32	18 40	
9	16 5 45	24 56	5 1 22	31 26	35 14 1	13 47	20 21	
10	17 5 11	8 9	4 58 22	30 26	36 14 28	15 22	22 1	

11	18 4 39	21 7	4 40 22	28 26	37 14 55	16 17	23 41	
12	19 4 9	3 50	4 7 22	26 26	38 15 22	17 32	25 20	
13	20 3 41	16 17	3 24 22	25 26	39 15 48	18 47	26 56	
G	21 3 15	28 30	2 32 22	24 26	40 16 14	20 22	28 33	
15	22 2 50	10 4	1 33 22	23 26	40 16 40	21 17	om 0	

16	23 2 27	22 23	0 31 22	22 26	40 17 5	22 32	1 45	
17	24 2 7	4 10	on 32 22	21 26	39 17 30	23 47	3 20	
18	25 1 48	15 57	1 33 22	20 26	38 17 54	25 2	4 55	
19	26 1 31	27 51	2 32 22	19 26	37 18 17	26 18	6 29	
20	27 1 15	9 56	3 24 22	19 26	36 18 39	27 33	8 2	

G	28 1 1	22 17	4 8 22	18 26	35 19 2	28 48	9 35	
22	29 0 48	5 5	4 41 22	18 26	33 19 25	om 3	11 8	
23	m 0 0 38	18 7	5 1 22	17 26	31 19 48	1 18	12 40	
24	1 0 29	1 39	5 5 22	17 26	30 20 10	2 34	14 11	
25	2 0 22	15 35	4 51 22	16 26	28 20 33	3 40	15 42	

26	3 0 16	29 53	4 19 22	16 26	26 20 53	5 4	17 12	
27	4 0 13	14 26	3 20 22	16 26	23 21 13	6 19	18 42	
G	5 0 12	9 6	1 26 22	D 16 26	20 21 35	7 34	20 11	
29	6 0 13	13 48	1 12 22	16 26	17 21 53	8 50	21 39	
30	7 0 16	28 24	0 8 6 22	16 26	14 22 12	10 5	23 7	
31	8 0 21	12 50	1 23 22	17 26	11 22 32	11 20	24 35	

Days	u's rises	δ's rises	♀'s rises	♂'s rises	h's declin.	u's declin.	δ's declin.	♀'s declin.	♂'s declin.
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1	8 a 59	9 a 56	5 m 42	5 m 55	15 s 24	22 n 51	23 n 30	0 s 14	1 s 21
7	8 37	9 47	6 3	sets	15 28	22 52	23 25	3 16	5 57
13	8 15	9 37	6 23	5 a 37	15 31	22 52	23 17	6 16	10 16
19	7 53	9 26	6 43	5 29	15 33	22 52	23 9	9 11	14 13
25	7 30	9 15	7 3	5 31	15 33	22 52	23 1	11 58	17 42

The LUNATIONS.

Last quarter the 2d day, at 5 minutes past 10 morning.

New Moon the 9th day, at 42 minutes past 9 night,

First quarter the 18th day, at 7 minutes past 3 morning.

Full Moon the 25th day, at 26 minutes past 4 morning.

M D	Sundays & other remark. days	☉ rises	☉ sets	☉'s declin	D's declin.	D rises & sets	D South	Clock aft. ☉	
1	All Sa nts.	7 12	4 48	14 s 31	18 n 15	10 a 24	5 m 12	16 14	
2	Pr. Ed. b. Al	Soul 14	4 46	14 5	14 2	11 45	6 7	16 15	
3	Prs. Soph. born	7 16	4 44	15 9	9 10	morn	6 58	16 15	
4	22 S. aft. Trin.	7 18	4 42	15 28	3 57	1 2	7 46	16 14	
5	Powder Plot	7 19	4 41	15 46	1 s 21	2 19	8 32	16 12	
6	Leonard. Mich.	T. b 21	4 39	16 4	6 31	3 33	9 17	16 9	
7	D. Cam. born	7 23	4 37	16 22	11 19	4 47	10 3	16 6	
8	Prs Aug. Soph. b	7 24	4 36	16 39	15 33	5 58	10 49	16 1	
9	Ld. Mayor's day	at Lon.	4 34	16 57	19 2	D sets	11 36	15 56	
10		7 28	4 32	17 14	21 38	4 a 26	0 a 24	15 50	
11	23 S. aft. Trin.	St. Mart.	4 30	17 30	23 12	5 7	1 14	15 43	
12		7 31	4 29	17 47	23 41	5 55	2 4	15 35	
13	Britius	7 33	4 27	18 3	23 5	6 51	2 53	15 26	
14		7 34	4 26	18 13	21 28	7 52	3 41	15 17	
15	Machutus	7 36	4 24	18 34	18 55	8 58	4 27	15 7	
16		7 37	4 23	18 49	15 34	10 5	5 12	14 55	
17	Hugh	7 39	4 21	19 4	11 33	11 15	5 56	14 43	
18	24 S. aft. Trin.	7 40	4 20	19 18	6 58	morn	6 39	14 31	
19		7 42	4 18	19 32	1 9	0 27	7 23	14 17	
20	Edmund	7 43	4 17	19 46	3 n 13	1 39	8 9	14 3	
21		7 45	4 15	20 0	8 28	2 33	8 57	13 48	
22	Cecilia. O. Mar.	day 46	4 14	20 13	13 27	4 10	9 49	13 32	
23	St. Clement	7 47	4 13	20 25	17 52	5 29	10 45	13 15	
24		7 49	4 11	20 37	21 16	6 53	11 46	12 58	
25	25 S. aft. Trin.	D. Glouc. b.	10 20	49	23 16	D rises	morn	12 40	
26		7 51	4 9	21 1	23 35	5 a 26	0 50	12 21	
27		7 52	4 8	21 12	22 11	6 41	1 55	12 1	
28	Mic. Term ends	7 54	4 6	21 23	19 16	8 4	2 57	11 40	
29		7 55	4 5	21 33	15 10	9 25	3 55	11 19	
30	St. Andrew	7 56	4 4	21 43	10 19	10 44	4 48	10 57	
Day	Day decreas.	Length of day	Helioc. long. ♀	Helioc. long. ♀	Helioc. long. ♂	Helioc. long. ♂	Helioc. long. ♀	Helioc. long. ♀	h sets
1	6 57	9 37	27 56	17 56	14 43	9 8 0	17 13 1	5 23 1	11 a 55
7	7 20	9 14	28 8	18 27	17 45	15 2 27	5 23 19	11 32	
13	7 39	8 55	28 19	18 58	20 46	21 5 6	4 38	13 4	11 9
19	7 58	8 36	28 31	19 29	23 45	27 8 16	10 53	5 53	10 46
25	8 14	8 20	28 42	20 0	26 42	3 11 12	25 40	3 2 10	22

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November.

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Days	Daylig. begins	Day lig. ends	Durat. twilig.	Pl. D's node	h's latitude	u's latitude	δ's latitude	♀'s latitude	♂'s latitude
1	5 17	6 43	1 59	28 ♀ 33	1 31	0 33	1 n 22	0 n 39	1 s 53
7	5 25	6 35	2 28	28 14	1 31	0 33	1 35	0 26	2 20
13	5 34	6 26	2 37	27 54	1 30	0 32	1 50	0 12	2 35
19	5 41	6 19	2 57	27 35	1 30	0 32	2 5	0 2	2 30
25	5 48	6 12	2 7	27 16	1 30	0 31	2 21	0 17	1 55

M D	☉'s longitude.	☽'s long.	☽'s latitude	h's long.	u's long.	δ's long.	♀'s long.	♂'s long.
1	m 9 0 28	27 3	2 s 34	22 17	26 11	22 51	12 m 36	26 m 2
2	10 0 38	11 2	3 34	22 18	26 4	23 10	13 51	27 28
3	11 0 30	24 47	4 21	22 19	26 c	23 28	15 6	28 54
4	12 1 4	8 m 17	4 53	22 20	25 56	23 45	16 21	0 19
5	13 1 20	21 33	5 8	22 21	25 52	24 1	17 36	1 43
6	14 1 38	4 36	5 6	22 22	25 48	24 17	18 52	3 7
7	15 1 58	17 26	4 50	22 23	25 44	24 32	20 6	4 30
8	16 2 20	0 m 4	4 19	22 24	25 39	24 47	21 23	5 52
9	17 2 44	12 30	3 36	22 25	25 34	25 1	22 38	7 13
10	18 3 10	24 44	2 44	22 27	25 29	25 14	23 53	8 32
G	19 3 37	6 48	1 45	22 28	25 24	25 26	25 9	9 50
12	20 4 6	18 43	0 42	22 30	25 19	25 38	26 24	11 7
13	21 4 37	0 32	0 n 22	22 32	25 13	25 50	27 39	12 23
14	22 5 9	12 19	1 26	22 34	25 7	26 1	28 54	13 37
15	23 5 42	24 6	2 26	22 36	25 1	26 11	0 1	14 48
16	24 6 17	5 58	3 20	22 38	24 55	26 20	1 25	15 57
17	25 6 53	18 1	4 6	22 40	24 49	26 28	2 40	17 3
G	26 7 30	0 19	4 42	22 43	24 43	26 36	3 55	18 6
19	27 8 8	12 58	5 6	22 45	24 37	26 44	5 11	19 8
20	28 8 47	26 1	5 14	22 47	24 31	26 51	6 26	20 6
21	29 9 27	9 31	5 6	22 50	24 24	26 58	7 41	20 58
22	♂ 0 10 8	23 29	4 40	22 52	24 17	27 4	8 57	21 44
23	1 10 51	7 52	3 56	22 55	24 10	27 9	10 12	22 24
24	2 11 35	22 38	2 55	22 58	24 3	27 13	11 27	22 59
G	3 12 20	7 11 37	1 41	23 1	23 56	27 15	12 43	23 30
26	4 13 6	22 42	0 19	23 4	23 49	27 17	13 58	23 50
27	5 13 54	7 24 43	1 3	23 7	23 42	27 18	15 13	24 2
28	6 14 44	22 33	2 21	23 10	23 34	27 R 18	16 29	24 R 5
29	7 15 35	7 2 6	3 27	23 13	23 27	27 18	17 44	23 59
30	8 16 27	21 17	4 20	23 17	23 19	27 18	18 59	23 39

Days	☽ ries	♂ ries	♀ sets	♂ sets	h's declin.	u's declin.	δ's declin.	♀'s declin.	♂'s declin.
1	7 a 1	8 a 59	5 a 0	5 a 15	15 s 32	22 n 52	22 n 52	15 s 1	21 s 6
7	6 35	8 40	4 52	5 11	15 30	22 51	22 48	17 23	23 21
13	6 9	8 20	4 46	5 10	15 26	22 50	22 48	19 28	24 51
19	5 42	8 0	4 41	5 9	15 22	22 49	22 52	21 14	25 31
25	5 15	7 38	4 38	5 8	15 16	22 48	22 52	22 37	25 12

The LUNATIONS.

Last quarter the 1st day, at 8 evening.

New Moon the 9th day, at 11 minutes past 4 afternoon,

First quarter the 17th day, at 8 evening,

Full Moon the 24th day, at 14 minutes past 3 afternoon,

Last quarter the 31st day, at 36 minutes past 8 morning,

M	Sundays & other D remark. days	☉ rises	☉ sets	☉'s declin.	☽'s declin.	☽ rises & sets	☽ South	Clock aft. ☉
1	Advent Sund.	7 57	4 3	21 52	5 n 4	morn	5 m 38	10 35
2		7 58	4 2	22 1	0 s 18		6 24	10 12
3		7 59	4 1	22 10	5 30	1 17	7 10	9 48
4		8 0	4 0	22 18	10 20	2 30	7 55	9 24
5		8 1	3 59	22 26	14 40	3 42	8 40	8 59
6	Nicholas	8 2	3 58	22 33	18 18	4 52	9 26	8 33
7		8 2	3 58	22 40	21 5	5 59	10 13	8 7
8	Conception	8 3	3 57	22 46	22 53	7 3	11 2	7 40
9	2 S. in Advent	8 4	3 56	22 52	23 39	☽ sets	11 51	7 13
10		8 4	3 56	22 58	23 19	4 a 35	0 a 40	6 45
11		8 5	3 55	23 3	21 57	5 34	1 28	6 18
12		8 5	3 55	23 7	19 38	6 37	2 14	5 49
13	Lucy	8 6	3 54	23 12	16 28	7 45	2 59	5 21
14		8 6	3 54	23 15	12 38	8 54	3 43	4 52
15		8 7	3 53	23 19	8 15	10 2	4 26	4 23
16	3 S. in Advent	O Sapi.	C. T. en	23 21	3 29	11 11	5 8	3 53
17	Oxf. Term ends	8 7	3 53	23 24	1 n 32	morn	5 51	3 24
18		8 8	3 53	23 25	6 37	0 21	6 36	2 54
19		8 8	3 52	23 27	11 36	1 36	7 24	2 24
20		8 8	3 52	23 28	16 7	2 53	8 16	1 54
21	St. Thomas	Shor. d.	3 52	23 28	19 54	4 12	9 13	1 24
22		8 8	3 52	23 28	22 32	5 31	10 15	0 54
23	4 S. in Advent	8 8	3 52	23 27	23 39	6 45	11 19	0 25
24		8 8	3 52	23 26	23 2	☽ rises	morn	obe. 5
25	Christmas day	8 8	3 52	23 25	20 43	5 a 19	0 23	0 35
26	St. Stephen	8 7	3 53	23 23	16 57	6 45	1 25	1 5
27	St. John	8 7	3 53	23 20	12 10	8 9	2 23	1 36
28	Holy Innocents	8 7	3 53	23 18	6 49	9 31	3 16	2 4
29		8 6	3 54	23 14	1 17	10 50	4 6	2 34
30	S. aft. Christm	8 6	3 54	23 10	4 s 8	morn	4 53	3 3
31	Silvester	8 5	3 55	23 6	9 42	0 5	5 39	3 31
Days	Day Length decreaf. of day	Helioc. long. ♀	Helioc. long. ♂	Helioc. long. ♀	Helioc. long. ♂	Helioc. long. ♀	Helioc. long. ♂	☽ sets
1	8 28	8 6	28 53	20 11 31	29 11 38	9 11 17	5 3 11	5 8 28
7	8 38	7 56	29 5	21 2	28 32	15 23	14 40	12 11 16
13	8 46	7 48	29 16	21 33	6 25	21 30	24 9	19 53 35
19	8 50	7 44	29 28	22 4	8 16	27 36	3 38	22 55
25	8 50	7 44	29 39	22 35	11 7	3 43	13 7	20 12 38

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December.

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Days	Day lig. begins	Day lig. ends	Durat. twilig.	Pl. D's node	h's latitude	u's latitude	δ's latitude	♀'s latitude	♂'s latitude
1	5 54	6 6	2 18	26 45	1 s 29	0 s 31	2 n 37	0 s 31	0 s 33
7	5 57	6 3	2 10	26 38	1 28	0 30	2 54	0 45	1 n 26
13	5 59	6 1	2 12	26 19	1 28	0 29	3 11	0 57	2 46
19	6 1	5 59	2 11	26 c	1 27	0 28	3 27	1 8	2 51
25	6 1	5 50	2 11	25 41	1 27	0 27	3 42	1 s 18	2 15
M D	☉'s longitude		D's long.	D's latitude	h's long.	u's long.	δ's long.	♀'s long.	♂'s long.
1	♂ 9	17 20	5 17	4 s 56	23 20	23 11	27 17	20 15	23 10
3	10	18 15	18 35	5 14	23 24	23 3	27 14	21 30	22 30
4	11	19 11	1 42	5 15	23 27	22 55	27 10	22 45	21 39
5	12	20 9	14 31	5 1	23 31	22 47	27 5	24 120	30
6	13	21 8	27 5	4 32	23 34	22 39	27	25 16	19 26
7	14	22 9	9 26	3 51	23 39	22 31	26 54	26 31	18 10
8	15	23 11	21 36	3 0	23 43	22 23	26 48	27 47	16 49
9	16	24 14	3 37	2 2	23 47	22 15	26 41	29 2	15 28
10	17	25 18	15 32	0 58	23 51	22 7	26 33	0 17	14 6
11	18	26 22	27 22	0 n 7	23 56	21 59	26 24	1 33	12 45
12	19	27 27	9 10	1 12	24 0	21 51	26 14	2 48	11 28
13	20	28 33	20 57	2 14	24 4	21 43	26 2	4 3	10 24
14	21	29 39	2 46	3 18	24 9	21 34	25 49	5 19	9 35
15	22	30 46	14 41	3 59	24 14	21 26	25 37	6 34	8 56
16	23	31 53	26 46	4 37	24 18	21 18	25 24	7 49	8 24
17	24	33 0	9 3	5 4	24 23	21 10	25 10	9 4	8 0
18	25	34 8	21 37	5 17	24 28	21 2	24 55	10 20	7 57
19	26	35 16	4 33	5 15	24 33	20 54	24 39	11 35	7 55
20	27	36 24	17 53	4 56	24 38	20 45	24 22	12 50	7 58
21	28	37 32	1 8 41	4 19	24 43	20 37	24 5	14 5	8 13
22	29	38 40	15 55	3 26	24 48	20 29	23 47	15 20	8 38
23	30	39 48	0 11 35	2 18	24 53	20 21	23 29	16 35	9 14
24	1	40 56	15 35	0 59	24 58	20 13	23 10	17 51	9 54
25	2	42 5	0 47	0 s 26	25 3	20 5	22 50	19 6	10 38
26	3	43 14	16 3	1 48	25 0	19 58	22 29	20 21	11 28
27	4	44 23	15 11	3 3	25 14	19 50	22 8	21 36	12 22
28	6	45 33	16 4	4 3	25 20	19 43	21 47	22 51	13 21
29	7	46 43	0 11 33	4 47	25 25	19 35	21 25	24 6	14 23
30	8	47 53	14 37	5 11	25 31	19 28	21 3	25 22	15 27
31	9	49 4	23 13	5 17	25 36	19 20	20 40	26 37	16 34
32	10	50 15	11 22	5 6	25 48	19 13	20 17	27 52	17 44
Days	u's rises	δ's rises	♀'s sets	♂'s sets	h's declin.	u's declin.	δ's declin.	♀'s declin.	♂'s declin.
1	4 a 45	7 a 10	4 a 38	4 a 49	15 s 9	22 n 47	23 s 18	23 s 37	23 s 59
7	4 17	6 39	4 41	4 12	15 1	22 45	23 40	24 11	21 23
13	3 48	6 7	4 47	rises	14 52	22 43	24 8	24 18	19 11
19	3 18	5 30	4 56	6 m 13	14 42	22 41	24 40	23 59	18 51
25	2 47	4 50	5 7	16 9	14 31	22 38	25 14	23 13	19 58

Time of High-Water at LONDON in the morning and afternoon of every day in the year.

Mo. Days	JANUARY				FEBRUARY				MARCH				APRIL				Mo. Days
	morn.		aftern.		morn.		aftern.		morn.		aftern.		morn.		aftern.		
	h	m	h	m	h	m	h	m	h	m	h	m	h	m	h	m	
1	11	32			0	58	1	28			0	4	1	0	1	24	1
2	0	13	0	49	1	54	2	20	0	35	1	2	1	45	2	5	2
3	1	22	1	55	2	43	3	2	1	27	1	52	2	27	2	46	3
4	2	25	2	49	3	17	3	33	2	14	2	35	3	4	3	22	4
5	3	10	3	29	3	46	4	0	2	53	3	10	3	35	3	51	5
6	3	45	4	0	4	14	4	30	3	24	3	38	4	4	4	19	6
7	4	16	4	33	4	46	5	3	3	51	4	6	4	39	4	55	7
8	4	51	5	8	5	22	5	41	4	21	4	38	5	19	5	38	8
9	5	26	5	44	6	3	6	26	4	57	5	16	6	5	6	27	9
10	6	5	6	26	6	52	7	18	5	38	6	0	6	58	7	23	10
11	6	49	7	12	7	48	8	19	6	25	6	51	7	54	8	24	11
12	7	38	8	5	8	52	9	26	7	18	7	48	8	54	9	26	12
13	8	35	9	5	10	1	10	34	8	20	8	53	9	59	10	30	13
14	9	38	10	8	11	6	11	38	9	26	9	59	11	0	11	30	14
15	10	40	11	12			0	8	10	31	11	3	11	58			15
16	11	46			0	36	1	1	11	35			0	25	0	54	16
17	0	16	0	44	1	27	1	50	0	4	0	31	1	21	1	47	17
18	1	11	1	36	2	15	2	37	0	56	1	21	2	13	2	39	18
19	2	2	2	26	2	56	3	11	1	46	2	11	3	2	3	24	19
20	2	46	3	3	3	27	3	43	2	34	2	55	3	44	4	2	20
21	3	18	3	33	3	58	4	13	3	13	3	30	4	24	4	50	21
22	3	47	4	1	4	32	4	54	3	47	4	4	5	15	5	40	22
23	4	17	4	35	5	15	5	39	4	26	4	49	6	8	6	38	23
24	4	53	5	11	6	7	6	38	5	14	5	39	7	8	7	39	24
25	5	31	5	54	7	10	7	45	6	8	6	40	8	12	8	43	25
26	6	19	6	49	8	21	9	2	7	12	7	47	9	15	9	46	26
27	7	20	7	53	9	41	10	21	8	22	8	57	10	14	10	44	27
28	8	29	9	9	10	59	11	33	9	34	10	11	11	12	11	41	28
29	9	48	10	30					10	45	11	15			0	6	29
30	11	10	11	51					11	44			0	31	0	55	30
31			0	30					0	11	0	37					31

This Table may serve the following Places, by adding

	h	m
For Tinnmouth Haven, Hartle-pool, and Amsterdam	0	30
Brest	—	—
Seilly	—	—
Mount's Bay	—	—
Bridlington Pier and Humber	—	—
	1	0
	1	45
	1	55
	2	0

Time of High-Water at LONDON in the morning and afternoon of every day in the year.

Mo. Days	MAY				JUNE				JULY				AUGUST				Mo. Days
	morn.		aftern.		morn.		aftern.		morn.		aftern.		morn.		aftern.		
	h	m	h	m	h	m	h	m	h	m	h	m	h	m	h	m	
1	1	18	1	41	2	28	2	48	2	38	2	58	3	22	3	36	1
2	2	4	2	26	3	4	3	21	3	14	3	30	3	50	4	5	2
3	2	47	3	5	3	36	3	51	3	44	3	59	4	20	4	38	3
4	3	21	3	37	4	5	4	22	4	14	4	30	4	56	5	16	4
5	3	52	4	9	4	30	4	57	4	46	5	3	5	37	6	2	5
6	4	26	4	41	5	15	5	35	5	20	5	40	6	27	6	57	6
7	5	4	5	24	5	54	6	13	6	1	6	25	7	27	8	3	7
8	5	44	6	7	6	40	7	2	6	50	7	18	8	45	9	23	8
9	6	31	6	55	7	30	7	54	7	47	8	21	10	5	10	45	9
10	7	20	7	46	8	27	8	55	8	57	9	26	11	24	11	54	10
11	8	15	8	43	9	33	10	5	10	16	10	55			0	30	11
12	9	15	9	46	10	41	11	19	11	34			I	C	1	30	12
13	10	18	10	50	11	56			0	12	0	50	I	59	2	27	13
14	11	21	11	54	0	32	I	7	I	25	I	55	2	49	3	8	14
15			0	26	I	42	2	15	2	22	2	50	3	24	3	39	15
16	0	57	I	28	2	42	3	6	3	12	3	30	3	54	4	8	16
17	I	58	2	28	3	28	3	46	3	46	4	2	4	25	4	43	17
18	2	54	3	17	4	5	4	24	4	18	4	35	5	1	5	19	18
19	3	39	4	6	4	44	5	4	4	52	5	10	5	40	6	2	19
20	4	22	4	43	5	26	5	46	5	29	5	48	6	27	6	53	20
21	5	5	5	28	6	8	6	31	6	10	6	34	7	21	7	49	21
22	5	53	6	19	6	54	7	17	6	59	7	25	8	21	8	53	22
23	6	45	7	11	7	42	8	9	7	53	8	22	9	26	9	59	23
24	7	38	8	6	8	38	9	8	8	53	9	25	10	31	11	3	24
25	8	34	9	3	9	39	10	10	9	58	10	30	11	34			25
26	9	32	10	1	10	40	11	9	11	2	11	34	0	4	0	31	26
27	10	29	10	56	11	30					0	4	0	56	1	20	27
28	11	23	11	50	0	10	0	37	0	32	0	59	I	43	2	5	28
29			0	17	I	3	I	29	I	24	I	48	2	27	2	46	29
30	0	45	I	13	I	54	2	17	2	12	2	32	3	4	3	20	30
31	I	40	2	5					2	52	3	8	3	34	3	49	31

	Adding					h	m
For Fowey, Loo and Plymouth	—	—	—	—	—	3	10
Dartmouth, Harborough and Hull	—	—	—	—	—	3	30
Torbay and Tinmouth	—	—	—	—	—	3	40
Exmouth, Topsham and Lyme	—	—	—	—	—	3	50
Weymouth	—	—	—	—	—	4	20
Bridgewater and Texel	—	—	—	—	—	4	40
Portland and Hartlew	—	—	—	—	—	5	50

Time of High-Water at LONDON in the morning and afternoon of every day in the year.

Mo. Days	SEPTEMBER				OCTOBER				NOVEMBER				DECEMBER				Mo. Days
	morn.		aftern.		morn.		aftern.		morn.		aftern.		morn.		aftern.		
	h	m	h	m	h	m	h	m	h	m	h	m	h	m	h	m	
1	4	5	4	23	4	38	5	2	6	24	6	53	6	51	7	17	1
2	4	44	5	4	5	28	5	57	7	23	7	54	7	43	8	12	2
3	5	26	5	53	6	28	7	0	8	26	8	59	8	41	9	11	3
4	6	23	6	54	7	32	8	6	9	29	10	0	9	42	10	12	4
5	7	27	8	4	8	42	9	19	10	31	11	1	10	42	11	11	5
6	8	44	9	24	9	57	10	34	11	29	11	56	11	40			6
7	10	5	10	42	11	2	11	36		0	23		0	7	0	34	7
8	11	18	11	51		0	0	2	0	48	1	13	1	0	1	26	8
9				0 22	0	29	0	54	1	37	2	1	1	51	2	16	9
10	0	50	1	17	1	19	1	42	2	23	2	45	2	37	2	57	10
11	1	42	2	7	2	5	2	26	3	3	3	20	3	13	3	29	11
12	2	29	2	49	2	46	3	5	3	36	3	51	3	43	3	57	12
13	3	6	3	22	3	21	3	36	4	7	4	24	4	13	4	29	13
14	3	37	3	51	3	52	4	7	4	42	5	0	4	36	5	3	14
15	4	7	4	23	4	25	4	43	5	19	5	39	5	20	5	38	15
16	4	42	5	1	5	3	5	24	6	1	6	24	5	58	6	19	16
17	5	21	5	42	5	46	6	10	6	47	7	11	6	42	7	5	17
18	6	6	6	32	6	34	7	0	7	36	8	2	7	31	7	58	18
19	6	58	7	25	7	29	7	54	8	30	8	58	8	29	9	0	19
20	7	55	8	26	8	25	8	53	9	29	10	1	9	34	10	0	20
21	8	58	9	31	9	24	9	55	10	33	11	6	10	45	11	22	21
22	10	2	10	33	10	25	10	54	11	37			11	59			22
23	11	3	11	32	11	24	11	51	0	8	0	39	0	36	1	10	23
24			0	1			0	18	1	10	1	41	1	43	2	13	24
25	0	26	0	52	0	45	1	12	2	10	2	40	2	42	3	6	25
26	1	17	1	42	1	39	2	5	3	4	3	31	3	29	3	49	26
27	2	6	2	28	2	30	2	54	3	48	4	10	4	8	4	26	27
28	2	49	3	8	3	16	3	36	4	28	4	50	4	43	5	2	28
29	3	25	3	41	3	55	4	17	5	12	5	37	5	21	5	42	29
30	3	57	4	16	4	40	5	3	6	3	6	28	6	4	6	28	30
31					5	27	5	54					6	52	7	20	31

Subtracting

h m

For Leigh, Maes, and Gouries Gut	—	—	—	—	0	5
Graveland, Rochester, and Rammekins	—	—	—	—	1	20
Buoy of the Nore and Flushing	—	—	—	—	1	30
Portsmouth, Ostend, Shoe-Beacon, and Red-Sand	—	—	—	—	2	0
Harwich, Dover, Spithead, and Calais	—	—	—	—	3	0
Gunfleet, Haslings, Shoreham, Orfordness, and Diep	—	—	—	—	4	0
Yarmouth Pier and Needle	—	—	—	—	4	40
St. Helen's and Havre-de-Grace	—	—	—	—	5	30

III

IV

V

VI

IN the course of this year there will happen six eclipses, viz. three of the Sun, and three of the Moon; and four of them visible. They happen as below :

I. January 3d, ☾ eclipsed, visible.	h	m
Beginning of the eclipse	—	10 0 night.
Beginning of total darkness	10	58
Middle	—	11 47 $\frac{1}{2}$
End of total darkness	—	0 37 morn. of the 4th.
End of the eclipse	—	1 35
Digits eclipsed 20° 56' on N. side of the earth's shadow.		

II. January 19th, ☉ eclipsed, visible.	h	m
Beginning	—	9 54 morn.
Middle	—	10 33
End	—	11 12 $\frac{1}{2}$
Digits eclipsed 1° 17' on the sun's northern limb.		

III. June 15th, ☉ eclipsed, visible.	h	m
Beginning	—	4 11 $\frac{3}{4}$ aftern.
Middle	—	4 56 $\frac{3}{4}$
End	—	5 47 $\frac{1}{4}$
Digits eclipsed 5° 24' on the sun's northern limb.		

IV. June 30th, ☾ eclipsed, invisible	h	m
Beginning of the eclipse	—	0 43 $\frac{1}{4}$ aftern.
Beginning of total darkness	1	59 $\frac{1}{4}$
Middle	—	2 34 $\frac{3}{4}$
End of total darkness	—	3 10 $\frac{1}{4}$
End of the eclipse	—	4 26 $\frac{1}{4}$
Digits eclipsed 14° 27', on N. side of the earth's shadow.		

V. Dec. 9th, ☉ eclipsed, invisible.	
☉ at 4h. 11m. in long. 8° 17' 36' ☾'s lat. 47 $\frac{1}{4}$ south.	
☉ centrally eclipsed on the meridian at 4h. 20m. in long. 65° west, and lat. 84° south.	

VI. Dec. 24th, ☾ eclipsed, partly visible.	h	m
Beginning	—	1 43
Middle	—	3 7 $\frac{1}{4}$
☾ rises	—	3 52
End	—	4 32 $\frac{1}{2}$
Digits eclipsed 9° 18' on the ☾'s northern side,		

The Eclipse of Jupiter's

JANUARY	FEBRUARY	MARCH	APRIL
Emerfions	Emerfions	Emerfions	Emerfions
1 4 13 58	2 0 44 17	2 8 29 13	1 10 49 33
2 22 42 2	3 17 13 3	4 2 58 32	3 5 19 0
4 17 10 7	5 13 41 51	5 21 27 54	4 23 48 25
6 11 38 14	7 8 10 42	7 15 57 17	6 18 17 49
8 6 6 22	9 2 39 36	9 10 26 41	8 12 47 13
10 0 34 31	10 21 8 32	11 4 56 6	10 7 16 36
11 19 2 43	12 15 37 30	12 23 25 32	12 1 45 59
13 13 30 57	14 10 6 31	14 17 54 58	13 20 15 21
15 7 59 13	16 4 35 34	16 12 24 24	15 14 44 40
17 2 27 33	17 23 4 41	18 6 53 52	17 9 13 58
18 20 55 55	19 17 33 47	20 1 23 20	19 3 43 14
20 15 24 9	21 12 2 58	21 19 52 47	20 22 12 29
22 9 52 44	23 6 32 11	23 14 22 14	22 16 41 42
24 4 21 12	25 1 1 23	25 8 51 42	24 11 10 53
25 22 49 43	26 19 30 37	27 3 21 10	
27 17 18 18	28 13 59 55	28 21 50 38	
29 11 46 56		30 16 20 6	
31 6 15 36			
MAY	JUNE	JULY	AUGUST
		Immerfions	Immerfions
		2 9 37 22	1 11 40 37
		4 4 5 39	3 6 9 16
		5 22 33 56	5 0 37 54
		7 17 2 15	6 19 6 36
		9 11 30 35	8 13 35 19
		11 5 58 54	10 8 4 1
		13 0 27 14	12 2 32 44
		14 18 55 36	13 21 1 31
		16 13 24 0	15 15 30 19
		18 7 52 25	17 9 59 9
		20 2 20 51	19 4 28 1
		21 20 49 18	20 22 56 52
		23 15 17 47	22 17 25 45
		25 9 46 18	24 11 54 41
		27 4 14 51	26 6 23 35
		28 22 43 25	28 0 52 30
		30 17 11 59	29 19 21 29
			31 13 50 20
The Eclipses of Jupiter's Satellites will not be vifible this month, Jupiter being too near the Sun.	The Eclipses of Jupiter's Satellites will not be vifible this month, Jupiter being too near the Sun.		

first Satellite for 1787.

SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
Immersions	Immersions	Immersions	Emergences
2 8 19 25	2 10 32 18	1 12 40 9	1 14 37 49
4 2 48 25	4 5 1 14	3 7 8 33	3 9 5 37
5 21 17 24	5 23 30 8	5 1 36 55	5 3 33 23
7 15 46 24	7 17 59 1	6 20 5 15	6 22 1 7
9 10 15 25	9 12 27 52	8 14 33 32	8 16 28 50
11 4 44 24	11 6 56 42	10 9 1 47	10 10 56 32
12 23 13 27	13 1 25 29	12 3 29 59	12 5 24 14
14 17 42 25	14 19 54 14	13 21 58 9	Emergences
16 12 11 27	16 14 22 58	15 16 26 16	14 2 2 30
18 6 40 29	18 8 51 42	17 10 54 22	15 20 30 13
20 1 9 29	20 3 20 23	19 5 22 24	17 14 57 55
21 19 38 28	21 21 49 2	20 23 50 25	19 9 25 38
23 14 7 29	23 16 17 40	22 18 18 24	21 3 53 21
25 8 36 28	25 10 46 16	24 12 46 20	22 22 21 4
27 3 5 27	27 5 14 48	26 7 14 15	24 16 48 46
28 21 34 25	28 23 43 17	28 1 42 7	26 11 16 30
30 16 3 21	30 18 11 42	29 20 9 58	28 5 44 16
			30 0 12 3
			31 18 39 49

The Times of the Eclipses contained in this Table, are adapted to the Meridian of the Royal Observatory at Greenwich, and afford an excellent Method to discover the Longitude, or Difference of Meridians, between that and any other Place; which I shall illustrate by an EXAMPLE:

Suppose on the 28th Day of December of this Year, the Time of the Emergences of Jupiter's first Satellite be observed (by a Telescope) in an unknown Meridian, to happen at 4 h. 22 min. 36 sec. at night; I find by the Table, that the Time of this Emergence will happen at the British Observatory, at 5 h. 44 min. 16 sec. the same day: The Difference of the Times is 1 hour 48 min. 20 sec. which being converted into Degrees and Minutes of the Equator, will make 27 deg. 5 min. the Longitude of the Place of Observation, to the East, because the Time is more than that at the British Observatory.

Speculum Phænomenorum

JANUARY		FEBRUARY		MARCH	
3	☾ in apogeo	2	♂ in aphelio	1	♂ ☉ ♀ 10h.
3	☿ stationary	7	♂ ☉ ♀ 20h.	13	☾ in perigeo
3	♂ stationary	13	☾ in perigeo	13	♂ in ☿
3	☾ eclipsed, visibile	14	♂ ♀ ☾ 1h.	15	♂ ♀ ☾ 10h.
4	♂ ☉ ♀ 4h.	15	♂ ♂ ☾ 6h.	16	♂ ♂ ☾ 10h.
13	♂ elong. max.	16	♂ ♀ ☾ 19h.	16	♂ ♀ ☾ 14h.
16	♂ ♀ ☾ 21h.	16	♂ ♀ ☾ 23h.	17	♀ elong. max.
17	♂ ♂ ☾ 4h.	18	☉ in ☿ 3h. 50m.	18	♂ in perihelio
17	♂ ♀ ☾ 5h.	23	♂ ☿ ☾ 1h.	20	☉ in ♀ 4h. 14m.
17	☾ in perigeo	27	☾ in apogeo	20	♂ ♀ ☾ 8h.
18	☉ eclipsed, visibile			22	♂ ☿ ☾ 15h.
19	☉ in ☿ 12h. 59m			26	☾ in apogeo
20	♂ ♀ ☾ 8h.			28	♂ elong. max.
23	♂ in ☿				
25	♂ stationary				
26	♂ ☿ ☾ 14h.				
26	♀ in perihelio				
30	☾ in apogeo				
31	☐ ☉ ☿ 22h.				
APRIL		MAY		JUNE	
4	♂ stationary	1	♂ in aphelio	2	☾ in perigeo
6	♀ in ☿	6	☾ in perigeo	7	♂ ♀ ☾ 0h.
9	☾ in perigeo	7	♂ in perihelio	9	♂ stationary
13	♂ ♀ ☾ 4h.	9	♀ in aphelio	9	♂ in ☿
14	♂ ♀ ☾ 5h.	10	♂ ♀ ☾ 16h.	11	♂ ♂ ☾ 9h.
14	♂ ☉ ♀ 9h.	13	♂ ♂ ☾ 12h.	12	♂ ♀ ☾ 20h.
14	♂ ♂ ☾ 12h.	13	♂ elong. max.	14	♂ ☿ ☾ 3h.
17	♂ ♀ ☾ 5h.	14	♂ ♀ ☾ 1h.	14	♂ in perihelio
19	♂ ☿ ☾ 10p.	15	♂ ♀ ☾ 1h.	15	♂ ♀ ☾ 2h.
19	☉ in ☿ 16h. 56m.	17	♂ ☿ ☾ 6h.	15	☾ in apogeo
20	♂ in ☿	19	☾ in apogeo	15	☉ eclipsed, visibile
22	☾ in apogeo	19	☐ ☉ ♀ 7h.	16	♂ ☉ ♀ 3h.
28	♂ stationary	20	☉ in ♀ 17h. 27m.	21	☉ in ☿ 2h. 6m.
		24	♂ ☉ ☿ 20h.	29	☾ in perigeo
				30	☾ eclipsed, invisibile

ad Annum 1787.

JULY		AUGUST		SEPTEMBER	
4	♂ ♀ 5h.	7	♂ ♂ 19h.	5	♂ ♀ 5h.
10	♂ ♂ 4h.	7	♀ stationary	5	♂ ♂ 8h.
11	♂ ♀ 23h.	8	♂ ♀ 15h.	5	♂ in apogeo
12	♂ ♀ 15h.	9	♂ in apogeo	5	♀ in ♂
13	♂ in apogeo	11	♂ ♀ 12h.	8	♀ in perihelio
16	♂ ♀ 8h.	13	♂ ♀ 19h.	8	♀ elong. max.
17	♀ in ♂	18	♂ ♂ 5h.	9	♂ ♀ 20h.
22	♂ in ♀ 12h. 55m.	21	♂ ♂ 4h.	10	♂ ♀ 11h.
24	♀ elong. max.	22	♂ in ♀ 19h. 17m.	10	♀ in perihelio
26	♂ in perigeo	23	♂ in perigeo	11	♂ in ♂
28	♀ in ♂	27	♂ ♀ 12h.	18	♂ ♀ 2h.
28	♀ in aphelio	31	♀ stationary	19	♂ in perigeo
31	♂ ♀ 8h.			22	♂ in ♀ 15h. 47m.
				23	♂ ♀ 16h.
OCTOBER		NOVEMBER.		DECEMBER.	
2	♂ ♀ 14h.	9	♂ ♀ 22h.	2	♀ in ♂
2	♂ in apogeo	11	♂ ♀ 7h.	7	♂ ♂ 14h.
3	♂ ♂ 16h.	12	♂ in perigeo	7	♀ in perihelio
3	♂ ♂ 2h.	14	♂ ♂ 12h.	8	♂ ♀ 21h.
10	♂ ♀ 14h.	17	♂ ♀ 9h.	9	♂ in perigeo
11	♂ ♀ 5h.	17	♀ in ♂	9	♂ eclipsed, invisible
13	♀ in ♂	19	♀ elong. max.	10	♂ ♀ 9h.
15	♂ stationary	21	♂ in ♀ 20h. om.	13	♂ ♂ 2h.
16	♂ in perigeo	26	♂ ♀ 2h.	14	♂ ♀ 19h.
17	♂ ♂ 23h.	26	♂ in apogeo	18	♀ stationary
21	♂ ♀ 0h.	28	♂ stationary	20	♀ in aphelio
22	♂ in ♀ 23h. 45m.	28	♀ stationary	21	♂ in ♀ 8h. 22m.
24	♀ in aphelio	28	♂ ♂ 8h.	23	♂ ♀ 8h.
28	♂ stationary			23	♂ in apogeo
29	♂ ♀ 20h.			24	♂ eclipsed, visible
30	♂ in apogeo			25	♂ ♂ 9h.
31	♂ ♂ 17h.			28	♀ elong. max.

A Table of the Sun's semi-diurnal Arches, or Times

The SUN's Declination North.

Degr.	Lat. 49		Lat. 50		Lat. 51		Lat. 52		Lat. 53		Lat. 54	
	h	m	h	m	h	m	h	m	h	m	h	m
0	6	4	6	4	6	4	6	4	6	4	6	4
1	6	8	6	8	6	8	6	9	6	9	6	9
2	6	12	6	13	6	13	6	14	6	14	6	15
3	6	17	6	18	6	18	6	19	6	19	6	20
4	6	22	6	22	6	22	6	24	6	25	6	25
5	6	26	6	27	6	27	6	29	6	30	6	31
6	6	31	6	32	6	33	6	34	6	36	6	37
7	6	36	6	37	6	38	6	40	6	41	6	43
8	6	41	6	42	6	43	6	45	6	47	6	48
9	6	45	6	47	6	48	6	50	6	52	6	54
10	6	50	6	52	6	54	6	56	6	58	7	0
11	6	55	6	57	6	59	7	1	7	3	7	6
12	7	0	7	2	7	4	7	7	7	9	7	12
13	7	5	7	7	7	10	7	12	7	15	7	18
14	7	10	7	13	7	15	7	18	7	21	7	24
15	7	15	7	18	7	21	7	24	7	27	7	31
16	7	21	7	24	7	27	7	30	7	33	7	37
17	7	26	7	29	7	33	7	36	7	40	7	44
18	7	31	7	35	7	38	7	42	7	46	7	51
19	7	37	7	41	7	45	7	49	7	53	7	58
20	7	43	7	47	7	51	7	55	8	0	8	5
21	7	49	7	53	7	57	8	2	8	7	8	12
22	7	55	7	59	8	4	8	9	8	14	8	20
23	8	1	8	6	8	11	8	16	8	22	8	28
24	8	7	8	12	8	18	8	24	8	30	8	36

By these Tables the Times of the Sun's Rising and Setting may be found, in any Part of the Kingdom of *Great-Britain* or *Ireland*, after the following Manner: Where the Latitude of the Place is known, take the Sun's Declination out of the Table, on the Noon of the Day you desire to know the Time of his Rising and Setting; and with it, according as it is either North or South, enter these Tables in the Left-

of his visible half Duration above the Horizon.

The Sun's Declination South.

Degr.	Lat. 49	Lat. 50	Lat. 51	Lat. 52	Lat. 53	Lat. 54
	h m	h m	h m	h m	h m	h m
0	6 4	6 4	6 4	6 4	6 4	6 4
1	5 59	5 59	5 58	5 58	5 58	5 58
2	5 54	5 54	5 53	5 53	5 53	5 53
3	5 49	5 49	5 49	5 48	5 48	5 47
4	5 45	5 44	5 44	5 43	5 42	5 42
5	5 40	5 39	5 39	5 38	5 37	5 36
6	5 35	5 35	5 34	5 33	5 31	5 30
7	5 31	5 30	5 29	5 27	5 26	5 25
8	5 26	5 25	5 23	5 22	5 21	5 19
9	5 21	5 20	5 18	5 17	5 16	5 13
10	5 17	5 15	5 13	5 11	5 10	5 8
11	5 12	5 10	5 8	5 6	5 4	5 2
12	5 7	5 5	5 3	5 0	4 58	4 56
13	5 2	5 0	4 57	4 55	4 52	4 50
14	4 57	4 54	4 52	4 49	4 47	4 44
15	4 52	4 49	4 46	4 44	4 41	4 37
16	4 46	4 43	4 41	4 38	4 34	4 31
17	4 41	4 38	4 35	4 32	4 28	4 23
18	4 36	4 33	4 29	4 26	4 22	4 18
19	4 30	4 27	4 23	4 19	4 15	4 11
20	4 25	4 21	4 17	4 13	4 9	4 4
21	4 19	4 15	4 11	4 6	4 2	3 57
22	4 13	4 9	4 4	4 0	3 55	3 50
23	4 7	4 2	3 58	3 53	3 47	3 42
24	4 1	3 56	3 51	3 46	3 40	3 34

Left-hand Column, under the Word Degrees; then look the Latitude of the Place in the Top of the Table; and in that Column, against the Sun's Declination, will be found the Time of his visible half Duration above the Horizon, or Time of his Setting, correct by Refraction; then subtract the Time of his Setting from 12 Hours, the Remainder will be the Time of his Rising; double the Time of his Setting, the

A Table of the Sun's semi-diurnal Arches, or Times

The Sun's Declination North.

Degr.	Lat. 55		Lat. 56		Lat. 57		Lat. 58		Lat. 59		Lat. 60	
	h	m	h	m	h	m	h	m	h	m	h	m
0	6	4	6	4	6	4	6	4	6	4	6	4
1	6	9	6	10	6	10	6	10	6	11	6	11
2	6	15	6	16	6	16	6	17	6	17	6	18
3	6	21	6	22	6	22	6	23	6	24	6	25
4	6	27	6	28	6	29	6	30	6	31	6	32
5	6	32	6	34	6	35	6	36	6	38	6	39
6	6	38	6	40	6	41	6	43	6	44	6	46
7	6	44	6	46	6	48	6	49	6	51	6	53
8	6	50	6	52	6	54	6	56	6	58	7	1
9	6	56	6	58	7	1	7	3	7	5	7	8
10	7	2	7	5	7	7	7	10	7	13	7	16
11	7	8	7	10	7	14	7	17	7	20	7	23
12	7	15	7	18	7	21	7	24	7	27	7	31
13	7	21	7	24	7	28	7	31	7	35	7	39
14	7	28	7	31	7	35	7	39	7	43	7	47
15	7	34	7	39	7	42	7	46	7	51	7	56
16	7	41	7	45	7	49	7	54	7	59	8	4
17	7	48	7	52	7	57	8	1	8	7	8	13
18	7	55	8	0	8	5	8	10	8	16	8	22
19	8	2	8	7	8	13	8	19	8	25	8	32
20	8	10	8	15	8	21	8	28	8	35	8	42
21	8	18	8	24	8	30	8	37	8	45	8	53
22	8	26	8	32	8	39	8	47	8	55	9	4
23	8	34	8	41	8	49	8	57	9	6	9	16
24	8	43	8	51	8	59	9	8	9	18	9	29

the Sum will be the Length of the Day ; and double the Time of his Rising, the Sum will be the Length of the Night. But if the Latitude of the Place, and Declination of the Sun, consist of Degrees and Minutes, then a small Allowance must be made for the Minutes in both Cases, which may be done by a Person of an ordinary Capacity by a mental Proportion only. Thus, to find the Time of the Sun's Rising and Setting at

of his vifible half Duration above the Horizon.

The Sun's Declination South.

Degr.	Lat. 55		Lat. 56		Lat. 57		Lat. 58		Lat. 59		Lat. 60	
	h	m	h	m	h	m	h	m	h	m	h	m
0	6	4	6	4	6	4	6	4	6	4	6	4
1	5	58	5	58	5	58	5	58	5	57	5	57
2	5	52	5	52	5	52	5	51	5	51	5	50
3	5	47	5	46	5	45	5	45	5	44	5	43
4	5	41	5	40	5	39	5	38	5	37	5	36
5	5	35	5	34	5	33	5	32	5	31	5	29
6	5	29	5	28	5	27	5	25	5	24	5	22
7	5	23	5	22	5	20	5	19	5	17	5	15
8	5	17	5	16	5	14	5	12	5	10	5	8
9	5	12	5	10	5	8	5	5	5	3	5	2
10	5	5	5	3	5	1	4	59	4	56	4	53
11	4	59	4	57	4	54	4	52	4	49	4	46
12	4	53	4	51	4	48	4	45	4	42	4	38
13	4	47	4	44	4	41	4	38	4	34	4	30
14	4	41	4	37	4	34	4	30	4	27	4	23
15	4	34	4	31	4	27	4	23	4	19	4	14
16	4	27	4	24	4	20	4	15	4	11	4	6
17	4	21	4	17	4	12	4	8	4	3	3	57
18	4	14	4	9	4	5	4	0	3	54	3	48
19	4	7	4	2	3	56	3	51	3	45	3	39
20	3	59	3	54	3	49	3	43	3	36	3	29
21	3	52	3	46	3	40	3	34	3	27	3	19
22	3	44	3	38	3	31	3	24	3	17	3	9
23	3	36	3	29	3	23	3	15	3	6	2	57
24	3	27	3	20	3	13	3	5	2	55	2	45

at Aberdeen in Scotland, on the Longest Day; the Latitude of that Place is accounted 57 Degr. 7 Min. North, and the Sun's Declination 23 Degr. 28 Min. likewise North. By these you will find by the Table, that 5 Min. for the Sun's Declination, and 1 Min. for the Latitude of the Place, are both, to be added to 8 Hours 49 Min. the Time belonging to 57 Degr. of Latitude and 23 Degr. of North Declination, and the Sum will be 8 Hours 55 Min. the Time of his apparent Setting at Aberdeen, on the longest Day, whose Complement to 12 Hours, viz. 3 Hours 5 Min. will be the Time of his Rising, &c.

A Table of the Sun's Right-Ascension in Time, the greatest

Dece.	♈			♉			♊			♋			♌			♍		
	h	m	s	h	m	s	h	m	s	h	m	s	h	m	s	h	m	s
0	0	0	0	1	51	37	3	51	15	6	0	0	8	8	45	10	8	23
1	0	3	40	1	55	27	3	55	25	6	4	22	8	12	54	10	12	12
2	0	7	20	1	59	17	3	59	36	6	8	43	8	17	3	10	16	0
3	0	11	0	2	3	8	4	3	48	6	13	5	8	21	11	10	19	48
4	0	14	41	2	6	59	4	8	0	6	17	26	8	25	19	10	23	35
5	0	18	21	2	10	51	4	12	13	6	21	48	8	29	26	10	27	22
6	0	22	2	2	14	44	4	16	26	6	26	9	8	33	31	10	31	8
7	0	25	42	2	18	37	4	20	40	6	30	30	8	37	37	10	34	54
8	0	29	23	2	22	31	4	24	55	6	34	51	8	41	41	10	38	40
9	0	33	4	2	26	25	4	29	10	6	39	11	8	45	45	10	42	25
10	0	36	45	2	30	20	4	33	26	6	43	31	8	49	48	10	46	9
11	0	40	26	2	34	16	4	37	42	6	47	51	8	53	51	10	49	53
12	0	44	8	2	38	13	4	41	59	6	52	11	8	57	52	10	53	37
13	0	47	50	2	42	10	4	46	10	6	56	31	9	1	53	10	57	20
14	0	51	32	2	46	8	4	50	34	7	0	50	9	5	53	11	1	3
15	0	55	14	2	50	7	4	54	52	7	5	8	9	9	53	11	4	46
16	0	58	5	2	54	7	4	59	10	7	9	26	9	13	52	11	8	28
17	1	2	40	2	58	7	5	3	29	7	13	44	9	17	50	11	12	10
18	1	6	23	3	2	8	5	7	49	7	18	1	9	21	47	11	15	52
19	1	10	7	3	6	9	5	12	9	7	22	18	9	25	44	11	19	34
20	1	13	51	3	10	12	5	16	29	7	26	34	9	29	40	11	23	15
21	1	17	35	3	14	15	5	20	49	7	30	50	9	33	35	11	26	56
22	1	21	20	3	18	19	5	25	9	7	35	5	9	37	29	11	30	37
23	1	25	6	3	22	23	5	29	30	7	39	20	9	41	23	11	34	18
24	1	28	52	3	26	29	5	33	51	7	43	34	9	45	16	11	37	58
25	1	32	38	3	30	35	5	38	12	7	47	47	9	49	9	11	41	39
26	1	36	25	3	34	41	5	42	34	7	52	0	9	53	1	11	45	19
27	1	40	12	3	38	49	5	46	55	7	56	12	9	56	52	11	49	0
28	1	44	0	3	42	57	5	51	17	8	0	24	10	0	43	11	52	40
29	1	47	48	3	47	6	5	55	38	8	4	35	10	4	33	11	56	20
30	1	51	37	3	51	15	6	0	0	8	8	45	10	8	23	12	0	0

The time of the southing or meridian transits of the fixed stars in pa. 46, may be found thus. On the noon of the day, preceding the night in which you want to know the time of the southing of any of those stars, find the Sun's place in the Ephemeris, and with it take out of the above table his right ascension in time; this you may do by inspection to a minute, which will be sufficient for your present purpose: Then from the right-ascension of the star in pa. 46, subtract the right-ascension of the Sun, the remainder will be the estimate time of the star's southing, and will not differ from the true time above 2 or 3 minutes at most, which may be near enough for ordinary uses. But when great exactness is required, reduce the Sun's place to this estimate time, and with it find in the above table his right ascension to seconds, which being subtracted from that of the star, the remainder will be the

Obliquity of the Ecliptic being $23^{\circ} 28'$.

Decl.	α			η			$\uparrow$			$\downarrow$			$\equiv$			$\times$		
	h	m	s	h	m	s	h	m	s	h	m	s	h	m	s	h	m	s
0	12	0	0	13	51	37	15	51	15	18	0	0	20	8	45	22	8	23
1	12	3	40	13	55	27	15	55	25	18	4	22	20	12	54	22	12	12
2	12	7	20	13	59	17	15	59	36	18	8	43	20	17	3	22	16	0
3	12	11	0	14	3	8	16	3	48	18	13	5	20	21	11	22	19	48
4	12	14	41	14	6	59	16	7	0	18	17	26	20	25	19	22	23	35
5	12	18	21	14	10	51	16	12	12	18	21	48	20	29	26	22	27	22
6	12	22	2	14	14	44	16	16	26	18	26	9	20	33	31	22	31	8
7	12	25	42	14	18	37	16	20	40	18	30	30	20	37	37	22	34	54
8	12	29	23	14	22	31	16	24	55	18	34	51	20	41	41	22	38	40
9	12	33	4	14	26	25	16	29	10	18	39	11	20	45	45	22	42	25
10	12	36	45	14	30	20	16	33	26	18	43	31	20	49	48	22	46	9
11	12	40	26	14	34	16	16	37	42	18	47	51	20	53	51	22	49	53
12	12	44	8	14	38	13	16	41	59	18	52	11	20	57	52	22	53	37
13	12	47	50	14	42	10	16	46	16	18	56	21	21	1	53	22	57	20
14	12	51	32	14	46	8	16	50	34	19	0	50	21	5	53	23	1	3
15	12	55	14	14	50	7	16	54	52	19	5	8	21	9	53	23	4	46
16	12	58	57	14	54	7	16	59	10	19	9	26	21	13	52	23	8	28
17	13	2	40	14	58	7	17	3	29	19	13	44	21	17	50	23	12	10
18	13	6	23	15	2	8	17	7	49	19	18	1	21	21	47	23	15	52
19	13	10	7	15	6	9	17	12	9	19	22	18	21	25	44	23	19	34
20	13	13	51	15	10	12	17	16	29	19	26	34	21	29	40	23	23	15
21	13	17	35	15	14	15	17	20	49	19	30	50	21	33	35	23	26	56
22	13	21	20	15	18	19	17	25	9	19	35	5	21	37	29	23	30	37
23	13	25	6	15	22	23	17	29	30	19	39	20	21	41	23	23	34	18
24	13	28	52	15	26	29	17	33	51	19	43	34	21	45	16	23	37	58
25	13	32	38	15	30	35	17	38	12	19	47	47	21	49	9	23	41	39
26	13	36	25	15	34	41	17	42	34	19	52	0	21	53	1	23	45	19
27	13	40	12	15	38	49	17	46	55	19	56	12	21	56	52	23	49	0
28	13	44	0	15	42	57	17	51	17	20	0	24	22	0	43	23	52	40
29	13	47	48	15	47	6	17	55	38	20	4	35	22	4	33	23	56	20
30	13	51	37	15	51	15	18	0	0	20	8	45	22	8	23	24	0	0

the true time of the star's culminating or southing. And if from the time of the star's southing you subtract the semidiurnal arc belonging to it, the remainder will be the time of the star's rising; and being added to it, the sum will be the time of its setting.

Annexed is an Ex. of SIRIUS for Jan. 31, 1787.

☉'s place at noon	$\equiv$	$11^{\circ} 39'$	h	m	s
Rt. Asc. of Sirius	-	-	6	35	33
☉'s rt. asc. subtract	-	-	20	56	32
*'s estimate southing	-	-	9	39	1
☉'s rt. asc. at that time sub.	-	-	20	58	4
*'s true southing	-	-	9	37	29
Semid. arc sub. & add	-	-	4	36	55
*'s rising aftern.	-	-	5	0	34
*'s setting	-	-	14	14	24

A Table of the mean Right-Ascensions in time, Semidurnal-Arcs, Declinations, and Magnitudes of 40 remarkable fixed Stars, with their Names, and Bayer's Literal Characters, for January 1, 1782.

Names of the Stars	Ch.	Rt. Asc.			Declination			Semid.Ar.			Ma	
		h	m	s	°	'	"	h	m	s		
Pole star, Alruccabah -	α	0	48	3	88	8	36	n	sets not		2	
Andromeda's girdle, Mirach -	β	0	57	36	34	27	35	n	10	7	32	2
Andromeda's left foot, Almach	γ	1	50	36	41	16	30	n	sets not		2	
Ram's following horn -	α	1	54	56	22	25	27	n	8	9	35	2
Whale's jaw, Menkar -	α	2	50	54	3	13	26	n	6	19	48	2
Medusa's head, Algol - -	β	2	54	4	40	6	6	n	sets not		2	
Perseus's right side, Algenib	α	3	8	51	49	4	11	n	sets not		2	
Brightest of the 7 stars -	η	3	34	34	23	25	2	n	8	16	40	3
Bull's south eye, Aldebaran	α	4	23	26	16	3	23	n	7	28	51	1
Auriga's left shoulder, Capella	α	5	0	37	45	44	59	n	sets not		1	
Orion's left foot, Rigel -	β	5	4	4	8	28	3	s	5	20	28	1
Bull's north horn - -	β	5	12	32	28	24	22	n	8	57	1	2
Orion's left shoulder, Bellatrix	γ	5	13	27	6	8	10	n	6	34	41	2
Orion's girdle - -	ϵ	5	25	10	1	21	24	s	5	56	42	2
Orion's right shoulder, Betelgeuse	α	5	43	23	7	20	59	n	6	40	58	1
In the great Dog's mouth, Sirius	α	6	35	33	16	25	14	s	4	36	55	1
Head of the 1st Twin, Castor	α	7	20	41	32	20	54	n	9	38	21	1
In the less Dog's thigh, Procyon	α	7	27	54	5	46	41	n	6	32	50	1
Head of the 2d Twin, Pollux	β	7	31	59	28	32	14	n	8	58	13	2
Hydra's heart, Alphard -	α	9	16	53	7	43	21	s	5	24	20	2
Lyon's heart, Regulus -	α	9	56	45	13	1	32	n	7	11	28	1
Great Bear, Lower Pointer	β	10	48	34	57	32	47	n	sets not		2	
Great Bear, Upper Pointer -	α	10	50	8	62	55	27	n	sets not		2	
Lion's tail, Deneb - -	β	11	37	56	15	47	28	n	7	27	18	2
Great Bear, 1st in the tail, Aliath	ϵ	12	44	22	57	8	46	n	sets not		2	
Virgus's spike - -	α	13	13	44	10	1	2	s	5	12	20	1
Dragon's tail - -	α	13	58	30	65	25	19	n	sets not		2	
Bootes, Arcturus - -	α	14	5	46	20	20	5	n	7	55	26	1
Libra, Southern Scale - -	α	14	38	52	15	7	26	s	4	44	23	2
Libra, Northern Scale - -	β	15	5	18	8	33	59	s	5	19	57	2
Bright star in the North Crown	α	15	25	28	27	27	35	n	8	48	36	2
Scorpion's heart, Antares	α	16	16	4	25	55	50	s	3	34	6	1
Hercules's head, Raf. Algethi	α	17	4	43	14	39	8	n	7	20	41	2
Head of Serpentarius - -	α	17	24	49	12	44	2	n	7	9	50	2
Dragon's head, Rastaban -	γ	17	51	34	51	31	19	n	sets not		2	
Bright star in the Harp, Lyra	α	18	29	33	38	35	19	n	sets not		1	
Bright star in the Eagle, Atair	α	19	40	8	8	18	10	n	6	45	57	2
Mouth of south Fish, Fomalhaut	α	22	45	34	30	46	17	s	2	52	6	1
Pegasus's wing, Markab -	α	22	53	55	14	2	8	n	7	17	10	2
Andromeda's head - -	α	23	57	9	27	53	2	n	8	52	19	2

A Table of the Longitudes, Latitudes, and Magnitudes of the most remarkable fixed Stars that the Moon can Eclipse, or make a near Appulse unto; exactly rectified to the beginning of the year 1780.

Con.	Cha.	Long.	Lat.	Mag.	Con.	Cha.	Long.	Lat.	Mag.
♄	♄	11 4 48	2 9 44 n	4	♄	♄	12 1 6	0 21 48 n	2
	♄	14 28 2	1 5 37 n	4	♄	♄	17 56 14	1 49 14 s	3
♄	♄	16 48 2	0 13 11 s	4	♄	♄	22 3 46	4 24 41 n	3
♄	♄	17 46 21	1 48 7 n	4	♄	♄	24 18 10	4 2 52 n	4
♄	♄	26 55 21	4 1 36 n	3	♄	♄	24 41 24	0 1 1 n	4
♄	♄	2 43 37	5 45 30 s	3	♄	♄	26 47 49	3 29 24 n	4
♄	♄	5 23 14	2 35 37 s	3	♄	♄	27 24 23	0 6 53 n	4
♄	♄	6 42 57	5 29 2 s	1	♄	♄	29 30 5	1 57 17 s	3
♄	♄	19 30 14	5 21 59 n	2	♄	♄	29 52 12	5 26 15 s	3
♄	♄	21 42 52	2 13 29 s	3	♄	♄	0 7 10	1 2 18 n	2
♄	♄	0 22 14	0 55 4 s	4	♄	♄	1 34 27	1 39 52 n	4
♄	♄	2 13 39	0 50 34 s	3	♄	♄	4 43 50	4 0 23 s	4
♄	♄	5 1 57	6 46 12 s	2	♄	♄	6 41 35	4 32 17 s	1
♄	♄	6 52 7	2 2 28 n	3	♄	♄	8 23 19	6 5 21 s	4
♄	♄	15 27 6	0 12 19 s	3	♄	♄	28 11 40	6 56 48 s	3
♄	♄	20 11 11	6 40 4 n	1	♄	♄	0 8 35	2 22 24 n	4
♄	♄	4 28 28	3 10 22 n	4	♄	♄	3 15 8	2 5 31 s	4
♄	♄	5 38 46	0 4 13 n	4	♄	♄	7 6 25	3 55 22 s	3
♄	♄	18 35 0	3 1 57 s	4	♄	♄	9 18 54	3 24 55 s	3
♄	♄	21 11 15	3 46 1 s	4	♄	♄	11 46 9	5 2 33 s	3
♄	♄	24 50 0	4 51 9 n	4	♄	♄	11 55 13	0 53 36 n	3
♄	♄	26 46 26	0 27 27 n	1	♄	♄	13 10 58	1 28 7 n	4
♄	♄	3 19 2	0 8 29 n	4	♄	♄	0 58 32	4 36 46 n	3
♄	♄	18 26 24	0 31 21 s	4	♄	♄	17 7 37	4 57 31 s	4
♄	♄	21 58 9	3 2 51 s	4	♄	♄	18 42 30	2 32 6 s	4
♄	♄	24 2 24	0 41 36 n	3	♄	♄	20 27 42	2 33 40 s	3
♄	♄	0 17 47	5 4 42 n	3	♄	♄	25 38 54	2 3 47 s	4
♄	♄	1 45 53	1 22 24 n	3	♄	♄	0 11 19	2 43 22 n	4
♄	♄	7 6 18	2 48 57 n	3	♄	♄	8 30 20	0 22 57 s	4
♄	♄	20 46 27	2 2 11 s	1	♄	♄	14 4 16	1 2 8 s	4

This table shewing the mean longitudes of 60 stars to the beginning of the year 1780, their mean longitudes for any other time may be found if $50\frac{1}{3}$ seconds be added for each succeeding, and subtracted for each preceding year, and proportionably for a part of a year. Thus, to find the longitude of the first star ♄ ♄, or ♄ piseum, for Feb. 15, 1782, or 2 years and one eighth after the tabular time; here $2\frac{1}{8}$ times $50\frac{1}{3}$ sec. make $1' 47''$, which being added to the tabular longitude, gives ♄ 11 6' 35" for the longitude required at the given time.—The latitudes vary not.

The Latitudes and Longitudes of Ninety Places.

	Lat.	Long.		Lat.	Long.
	° / ' n	° / ' e		° / ' n	° / ' e
Alexandria, Egypt	31 11 n	30 17 e	Isfahan	32 25 n	52 55 e
Amsterdam, Hol.	52 23 n	4 52 e	Land's end	50 6 n	5 50 w
Archangel, Ruf.	64 34 n	38 30 e	Leghorn	43 33 n	10 25 e
Athens	37 40 n	23 52 e	Leoftoff	52 38 n	1 54 e
Babelmandel	12 50 n	43 50 e	Leverpool	53 22 n	3 10 w
Batavia	6 12 s	106 45 e	Lima	12 1 s	76 50 w
Bengal	22 0 n	92 45 e	Lisbon	38 42 n	9 4 w
Berlin	52 33 n	13 26 e	Lizard	49 57 n	5 21 w
Bombay Isle	19 42 n	73 3 e	London	51 31 n	0 0
Boston, Amer.	42 25 n	70 37 w	Madras	13 8 n	80 7 e
Breslau	51 3 n	17 13 e	Madrid	40 25 n	3 45 w
Brest	48 23 n	4 30 w	Manila	14 30 n	120 25 e
Bristol	51 28 n	2 30 w	Marfeilles	43 18 n	5 21 e
Buenos Ayres	34 35 s	58 0 w	Mexico	19 54 n	100 5 w
Cadiz	36 31 n	6 7 w	Mississipi, mouth	29 0 n	89 17 w
Calais	50 58 n	1 51 e	Moscow	55 25 n	37 51 e
Cairo, Egypt	30 2 n	31 26 e	Naples	40 51 n	14 19 e
Cambridge	52 13 n	0 4 e	Newcastle	55 0 n	1 18 w
Canaria Islands	28 1 n	15 0 w	Oporto	40 53 n	8 35 w
Canton	23 8 n	13 2 e	Orkney I. northend	59 24 n	3 23 w
Cape of Goodhope	34 29 s	18 23 e	Oxford	51 45 n	1 16 w
Cape Horn	55 59 s	67 26 w	Paris	48 50 n	2 25 e
Carthegena	10 27 n	75 26 w	Pekin	39 55 n	116 22 e
Charles Town Am.	33 22 n	79 50 w	Petersburg	59 56 n	30 19 e
Constantinople	41 0 n	28 53 e	Philadelphia	39 57 n	75 18 w
Copenhagen	55 41 n	12 50 e	Plymouth	50 24 n	4 15 w
Corinth	37 30 n	23 0 e	Port Mahon	39 51 n	3 53 e
Corke	51 54 n	8 30 w	Port Royal, Jam.	17 40 n	76 37 w
Dantzic	54 22 n	18 36 e	Portsmouth	50 48 n	1 1 w
Dover	51 7 n	1 19 e	Prague	50 5 n	14 15 e
Dublin	53 12 n	6 55 w	Quebec	46 55 n	71 12 w
Edinburgh	55 58 n	3 1 w	Rome	41 54 n	12 32 e
Ferro, Isle	27 48 n	18 6 w	Scully Isles	50 0 n	6 45 w
Finisterre, Cape	42 57 n	9 36 w	Smyrna	38 28 n	27 25 e
Genoa	44 25 n	8 41 e	Stockholm	59 22 n	18 12 e
Gibraltar	36 5 n	4 46 w	Syracuse	37 4 n	15 20 e
Glasgow	55 52 n	4 5 w	Tangier	35 55 n	5 45 w
Goa	15 31 n	73 50 e	Teneriff	28 16 n	16 32 w
Gottingen	51 32 n	9 58 e	Tunis	36 47 n	10 16 e
Greenwich	51 29 n	0 5 e	Turin	45 5 n	7 45 e
Hacluit's Head.	79 55 n	12 0 e	Venice	45 27 n	12 24 e
Halifax, America	44 46 n	63 20 w	Verd, Cape	14 47 n	17 28 w
Havanna	23 12 n	81 11 w	Vienna	48 11 n	16 28 e
Helena, I. St.	15 55 s	5 49 w	Upfal	59 52 n	17 43 e
Jerusalem	31 50 n	35 25 e	Uraniberg	55 54 n	12 52 e

F I N I S.

ong.

1
55 e
50 w
25 e
54 e
10 w
50 w
4 w
21 w
0
7 e
45 w
25 e
21 e
5 w
17 w
51 e
19 e
18 w
35 w
23 w
16 w
25 e
22 e
19 e
18 w
15 w
53 e
37 w
1 w
15 e
12 w
32 e
45 w
25 e
12 e
20 e
45 w
32 w
16 e
45 e
24 e
28 w
28 e
43 e
52 e